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METEOROLOGICAL DATA FOR THE TITAN 3C
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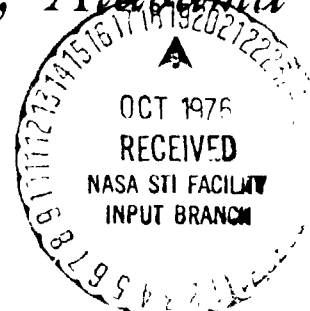
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16. ABSTRACT <p>The meteorological data for the 26-hour period prior to the Titan III C (Air Force 777) launch from Kennedy Space Center at 1004 EDT on May 20, 1975, are archived in this report. These data were collected in support of the NASA rocket exhaust effluent prediction and monitoring program. This is a rather unique data set in that soundings were made approximately every 2 hours from T-14 hours to T-0; therefore, high temporal resolution is provided. All supporting data, such as synoptic charts and wind tower data, are also included. This is the fifth in a series of seven data reports.</p>					
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TECHNICAL MEMORANDUM X-73338

COMPENDIUM OF METEOROLOGICAL DATA FOR THE TITAN III C (AF-777) LAUNCH IN MAY 1975

I. INTRODUCTION

This report is a compendium of all the meteorological data collected as a function of the joint Marshall Space Flight Center (MSFC)/Langley Research Center (LaRC)/Kennedy Space Center (KSC) rocket exhaust effluent prediction and monitoring program for the Titan III C (AF-777) launch from pad 40 at Kennedy Space Center at 1004 EDT on May 20, 1975. The data in this compendium were collected largely to support the MSFC diffusion predictions for the deployment of LaRC/KSC monitoring sites. The joint solid rocket motor exhaust prediction (MSFC) and measurement (LaRC and KSC) program evolved in 1972 utilizing the Titan and Delta launches as a source for empirical information that can be employed to more accurately predict the environmental effects of planned Space Shuttle operations.

These data are archived both as an aid in postlaunch analysis and because they represent a unique set of atmospheric soundings with high temporal resolution. Included in the report are the synoptic charts, surface observations, wind tower measurements, and rawinsonde, windsonde, and Jimsphere soundings made during this period. No attempt is made to analyze any of the data presented in this document.

II. DATA

The data are listed in Appendices A through G; page numbers for specific data are given in the Table of Contents. The dates, times, and sources of the data are listed in Table 1.

The synoptic charts are from the series published weekly by the National Oceanographic and Atmospheric Administration (NOAA). The surface data are from the Cape Canaveral Air Force Station (location shown as KSC meteorological station in Figure 1).

**TABLE 1. METEOROLOGICAL DATA SUMMARY FOR TITAN IIIC LAUNCH
ON 20 MAY 1975 AT 1004 EDT (1404Z)**

Data Type	Date (May 1975)	Time		Source
		EDT	Relative ^a	
Synoptic Charts ^b	19	0800	T-26 hr, 4 min	NOAA
	20	0800	T- 2 hr, 4 min	NOAA
	21	0800	T+21 hr, 56 min	NOAA
Surface Observations ^c	20, 21	0158 (20 May) to 0058 (21 May)	T- 8 hr, 6 min to T+ 14 hr, 54 min	NOAA
Rawinsonde	19	0730	T-26 hr, 34 min	USAF
	19	1015	T-23 hr, 49 min	USAF
	19	1957	T-14 hr, 7 min	USAF
	20	0057	T- 9 hr, 7 min	USAF
	20	0157	T- 8 hr, 7 min	USAF
	20	0457	T- 5 hr, 7 min	USAF
	20	0657	T- 3 hr, 7 min	USAF
	20	1005	T+ 1 min	USAF
	20	1157	T+ 1 hr, 53 min	USAF
	21	0105	T+15 hr, 1 min	USAF
Windsonde	20	0457	T- 5 hr, 7 min	USAF
Jimsphere	19	2157	T-12 hr, 7 min	USAF
	19	2257	T-11 hr, 7 min	USAF
	20	0427	T- 5 hr, 37 min	USAF
	20	0657	T- 3 hr, 7 min	USAF
Tetroon	19	1007	T-23 hr, 57 min	USAF
	20	0135	T- 8 hr, 29 min	USAF
	20	0756	T- 2 hr, 8 min	USAF
	20	1107	T+ 1 hr, 3 min	USAF
Tower Data	19, 20	2330 (19 May) to 1730 (20 May)	T-10 hr, 34 min to T+ 7 hr, 26 min	USAF

^a Relative to launch time; for example, 1006 EDT = T+2 min.

^b Charts for surface and 500 mb; also included are precipitation and maximum and minimum temperatures for the preceding 24-hour period.

^c Location of the base station for upper air and surface observations and towers is illustrated in Figure 1.

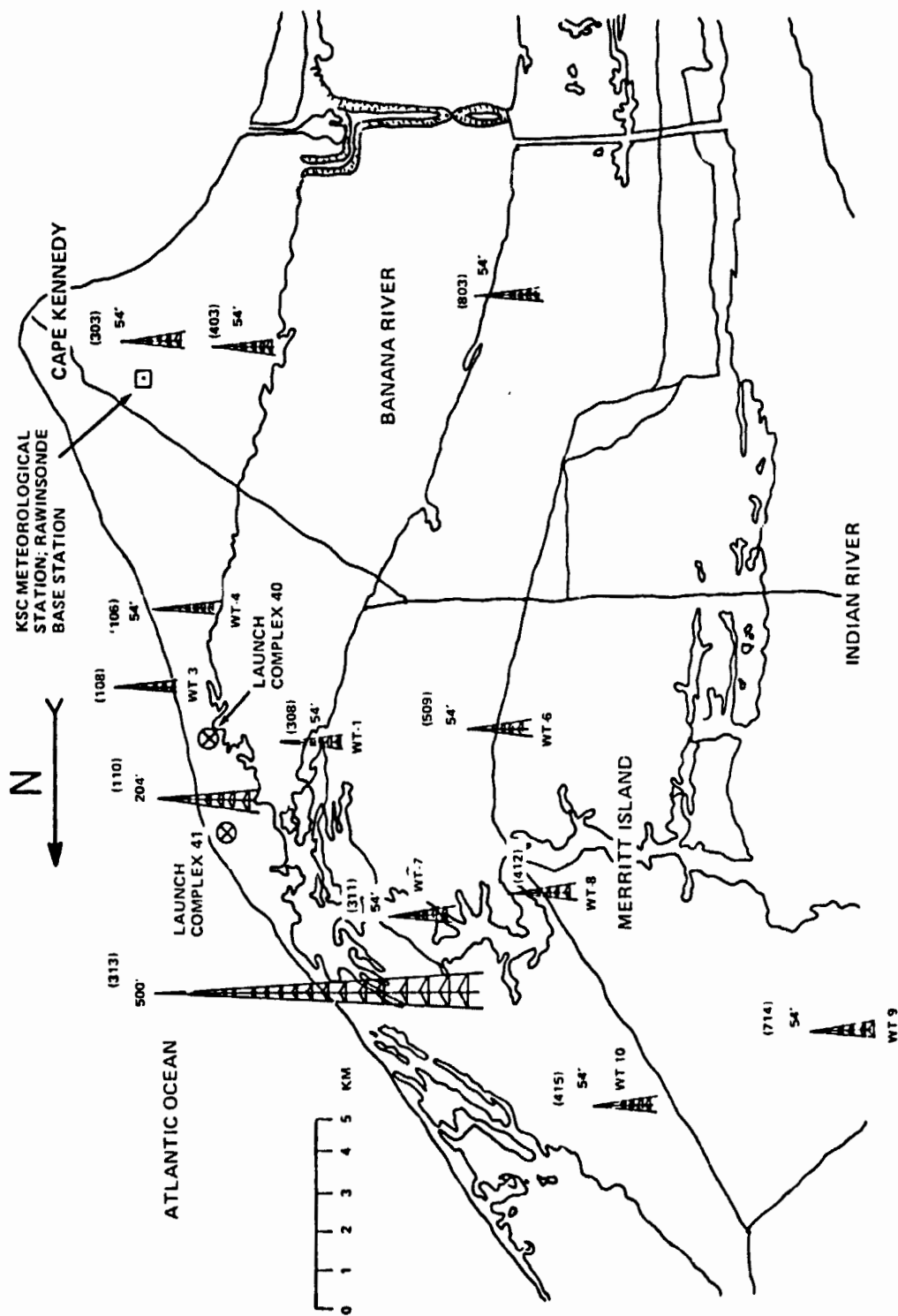


Figure 1. Location of meteorological towers and KSC meteorological station.

The rawinsonde runs were made with an AMQ-9 radiosonde (Fig. 2) using the GMD-4 rather than the NOAA J005B radiosonde system. The temperature and humidity sensor data are transmitted ten times per minute in the AMQ-9 by a clock-actuated switch rather than the aneroid barometer switch used in the NOAA radiosonde. Both systems measure azimuth and elevation with the directional receiver in the GMD. A transponder in the AMQ-9 is used to obtain the slant range to the radiosonde, enabling the calculation of altitude. The pressure is then calculated according to the hypsometric equation. The equations used in the computer program to calculate various thermodynamic quantities from the basic altitude, temperature, and relative humidity data are given in Appendix H.

The windsonde measures Eulerian¹ wind direction and speed as a function of altitude and is similar to the rawinsonde (AMQ-9) except that it does not have temperature and humidity sensors.

The Jimsphere wind sensor (Fig. 3) is a silvered spherical 2-meter diameter superpressure balloon with large, irregularly spaced external roughness elements. The roughness elements effectively decrease random vortex shedding, or aerodynamic noise, associated with a smooth balloon operating in a supercritical Reynolds number regime. Thus, the Jimsphere balloon follows small-scale wind motions with high accuracy. The Eulerian wind profile obtained by precision tracking of a Jimsphere balloon has resolution of less than 100 meters.

Because it is envisioned that use of the rawinsonde, windsonde, and Jimsphere data will be restricted to studies of the stabilized Space Shuttle rocket booster cloud, an altitude limit of 6.8 km (20 000 ft) was chosen. All data beyond that altitude are not included in this report. The excluded data are archived at MSFC and are available.

A tetrahedral balloon (tetroon) with a volume of 1 m^3 was tracked with radar to obtain the directional and altitude tracks illustrated in Appendix F. The tetroon was observed to follow the Lagrangian¹ trajectory of the air along a constant density surface. The average altitude of the density surface chosen for the tetroon flights at KSC was 609 m (2000 ft), and it was assumed that the tetroon expanded between 2 to 3 percent of the designed volume.

The data contained in this report cover a time period that is sufficient for most anticipated meteorological analyses. The chronology of the data relative to the time of launch is given in Figure 4. In most studies data within 1.5 hours of launch time (1004 EDT, 20 May) are sufficient. To facilitate retrieval of these data, an index is provided in Table 2 which gives the page number of data obtained within 1.5 hours of launch. It is understood that for

¹For practical applications the rawinsonde, windsonde, and Jimsphere data are treated as Eulerian; and the tetroon data can be treated as Lagrangian.



Figure 2. AMQ-9 radiosonde.

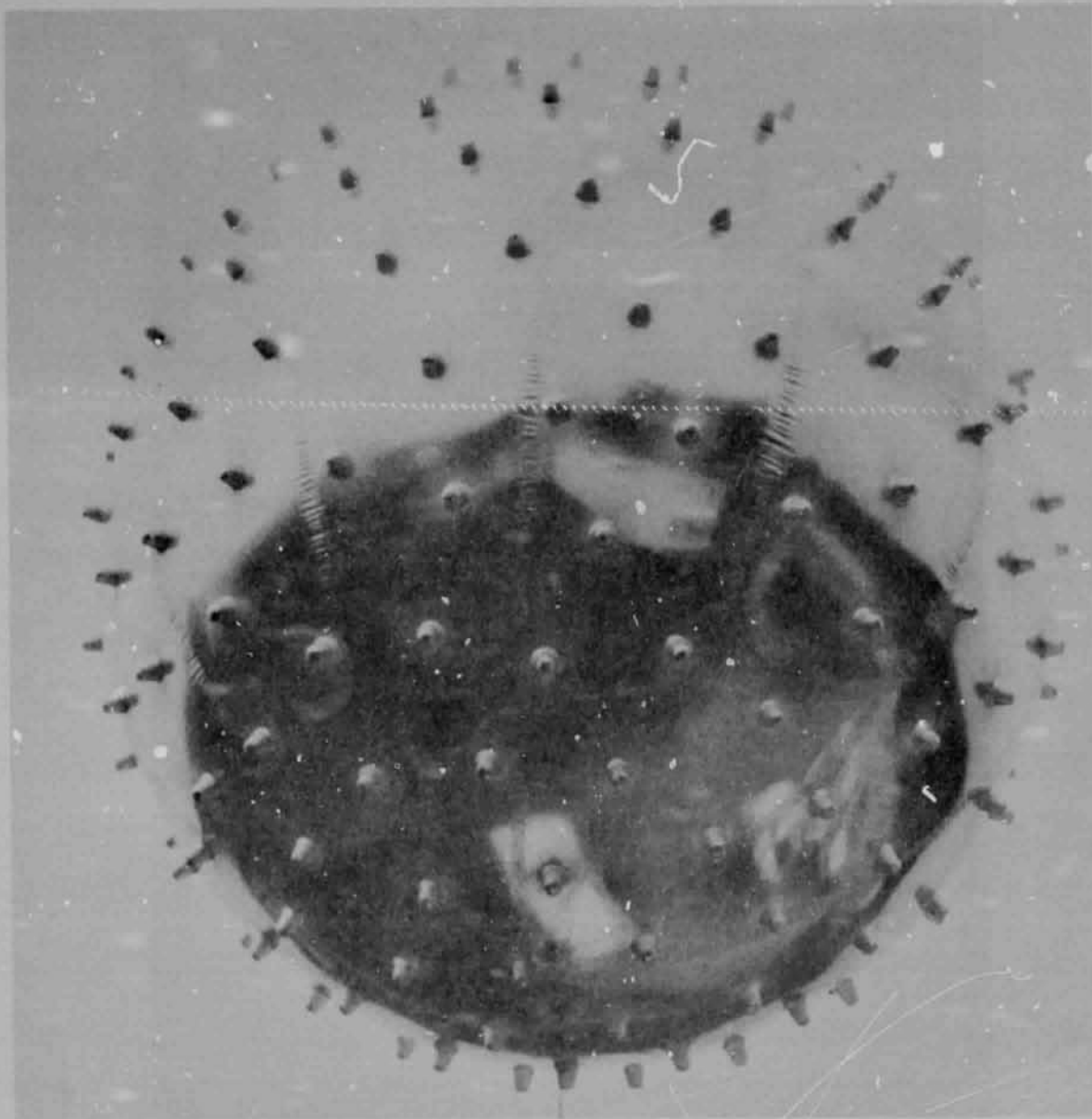


Figure 3. Jimsphere wind sensor.

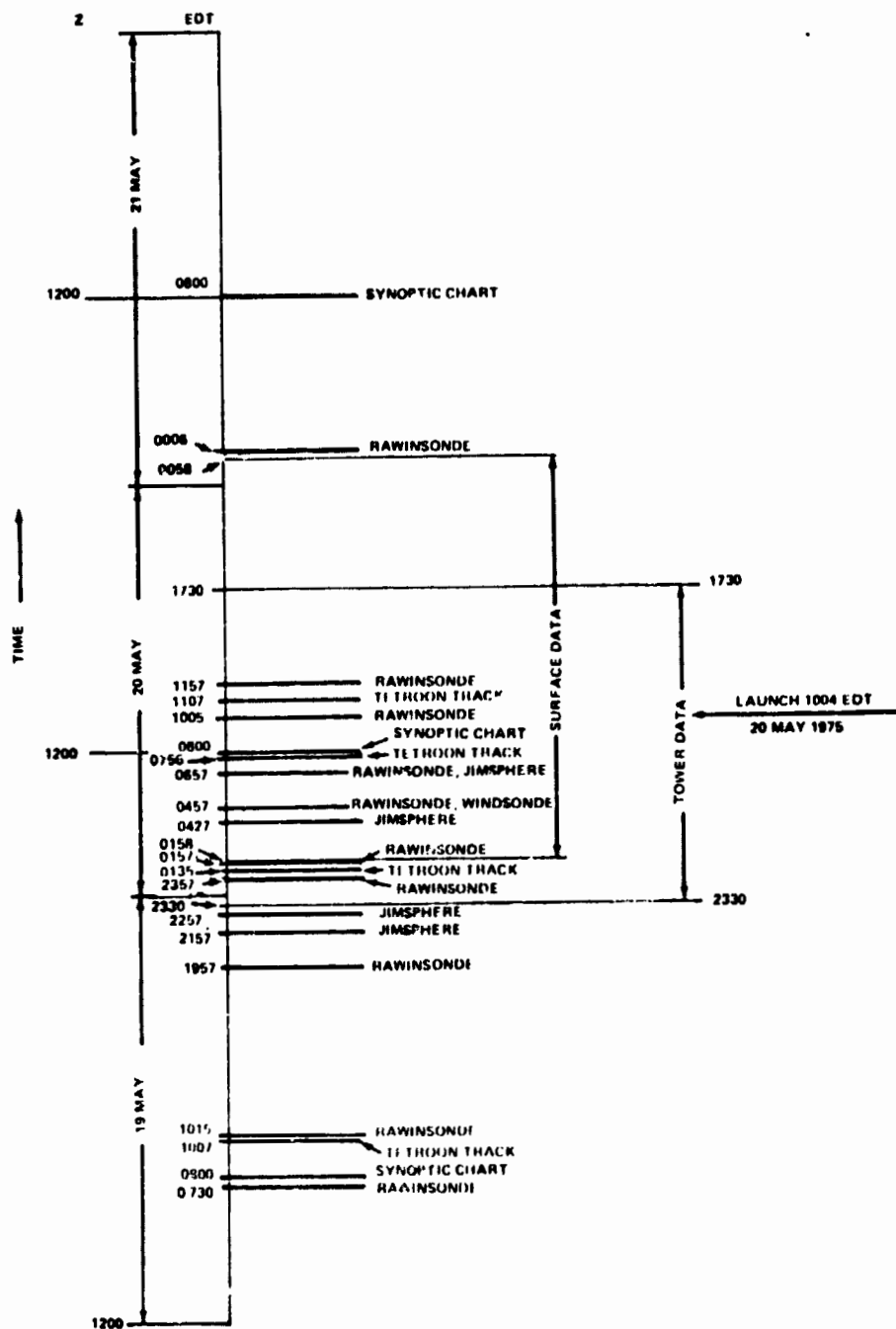


Figure 4. Data chronology.

TABLE 2. METEOROLOGICAL DATA OBTAINED WITHIN
1.5 HOURS OF T-0 (1004 EDT, 20 MAY 1975)

TIME		DATA TYPE	PAGE
T-1 hr, 19 min	(0845 EDT)		49
T- 7 min	(0957 EDT)	Surface Observation	17
T-C	(1004 EDT)	Surface Observation	17
T+ 1 min	(1005 EDT)	Rawinsonde	27
T+ 52 min	(1059 EDT)	Surface Observation	17
T+1 hr, 3 min	(1107 EDT)	Tetroon Track	45
T+1 hr, 26 min	(1130 EDT)		49

^a Tower data at 15-min intervals during the indicated period

^b Towers: 106, 110, 303, 308, 311, 313, 403, 412, 509, 714, and 803

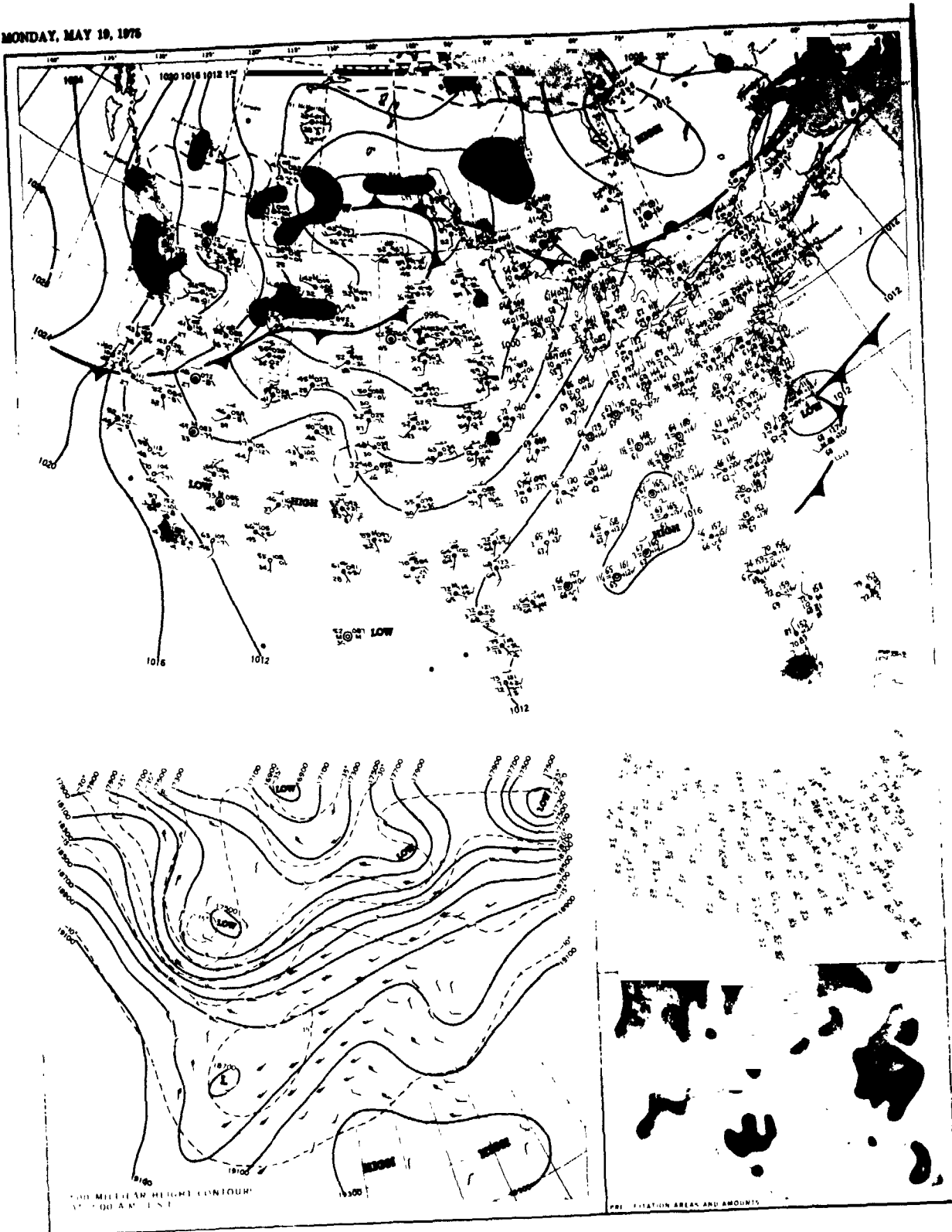
dynamic situations, such as the onset of a sea breeze or the passage of a front within 1.5 hours of launch, the selection would have to be narrowed to a more appropriate period.

III. LAUNCH CONDITIONS

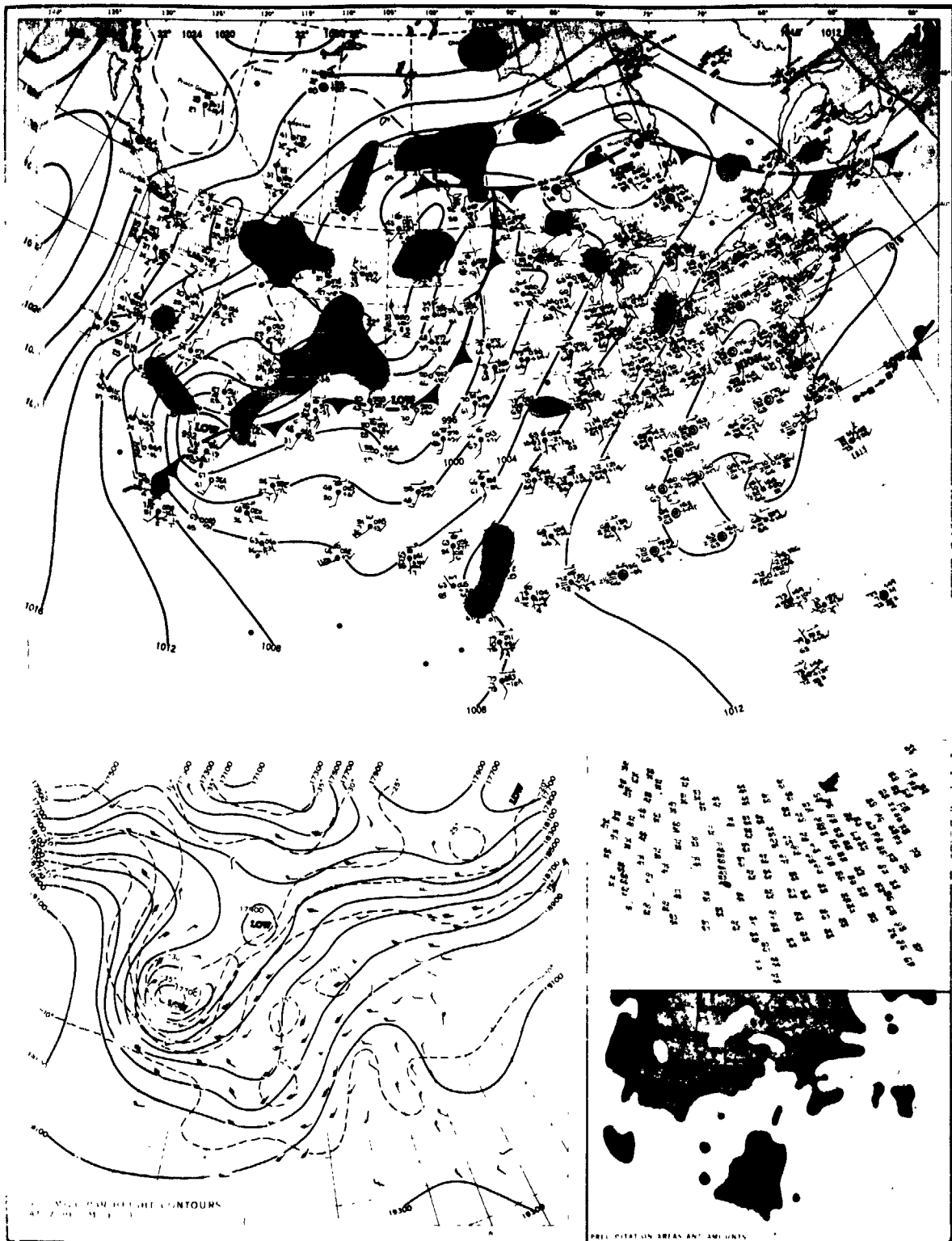
At launch the KSC meteorological station reported a clear sky, a visibility of 10 miles, a wind direction of 300° , and wind speed at 4 knots. The wind direction and speed at T-4 minutes were 320° and 5 knots, respectively, at the 62-m (204-ft) level of Tower 110 located in the vicinity of Launch Complex 40. The wind aloft at 2.05 km (6730 ft), near the observed altitude of exhaust cloud stabilization (~ 2 km), was 15° at 9 knots.

APPENDIX A
SYNOPTIC CHARTS

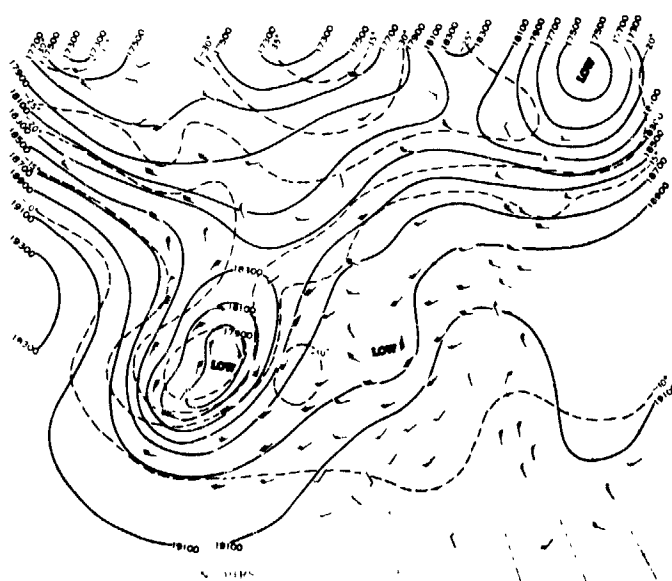
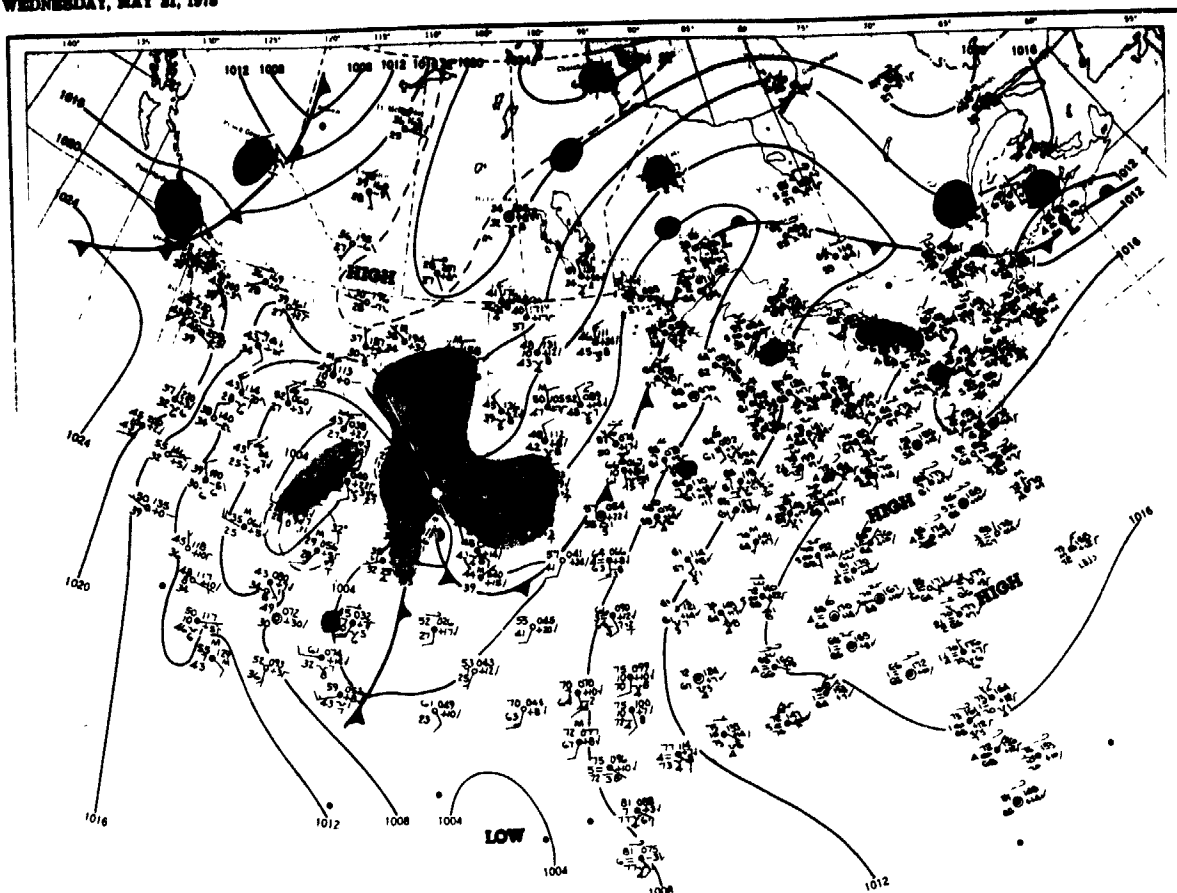
MONDAY, MAY 19, 1975



TUESDAY, MAY 29, 1967



WEDNESDAY, MAY 21, 1975



APPENDIX B
SURFACE DATA

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APPENDIX C
RAWINSONDE DATA

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RAWINSONDE RUN AN/6MD-4
CAPE CANAVERAL AFS, FLORIDA
1136Z 19 MAY 1975
ASCENT NBR 0331

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	260	5	22.8	20.4	1014.20	86	17.56	1103.06	368	670	.010	0
1000	309	13	20.8	19.0	979.92	89	16.26	1151.38	353	668	.008	330
2000	325	13	19.1	17.7	946.05	92	15.03	1118.63	339	666	.006	54
3000	322	12	16.3	14.9	913.13	92	12.69	1091.50	320	663	.002	142
4000	307	13	14.7	13.0	881.08	90	11.31	1059.60	305	661	.006	234
5000	299	14	13.8	7.5	849.97	66	7.86	1027.27	277	660	.004	251
6000	286	14	12.3	-0.1	819.78	42	4.62	997.68	251	658	.006	205
7000	273	15	11.1	-1.5	790.52	42	4.22	966.15	241	657	.006	204
8000	276	15	12.1	99.9	762.23	999	99.99	930.64	210	658	.002	31
9000	283	16	10.7	99.9	734.92	999	99.99	901.97	201	656	.003	330
10000	281	17	9.3	99.9	708.46	999	99.99	873.76	195	655	.003	263
11000	284	18	7.3	99.9	682.82	999	99.99	848.10	189	652	.002	341
12000	291	19	4.8	99.9	657.90	999	99.99	824.49	184	650	.005	346
13000	293	20	3.5	99.9	633.74	999	99.99	798.03	178	648	.002	330
14000	294	20	1.1	99.9	610.32	999	99.99	775.41	173	645	.000	34
15000	295	20	-0.8	-33.8	587.58	6	.28	751.53	169	643	.000	359
16000	295	22	-2.9	-33.6	565.53	7	.28	728.85	164	640	.002	298
17000	295	22	-5.4	99.9	544.14	999	99.99	707.86	159	637	.000	39
18000	294	21	-7.8	-38.2	523.37	7	.18	687.12	154	635	.001	142
19000	291	23	-10.5	-38.8	503.20	8	.17	667.44	150	631	.003	254
20000	290	26	-12.8	-35.4	483.63	13	.25	646.91	146	629	.006	281

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT
420	300	12	21.8	18.7	1000	83
1879	323	13	19.2	17.8	950	92
3401	315	12	16.0	14.5	900	91
4991	299	14	13.8	7.5	850	66
6661	275	15	11.5	-0.1	800	45
8428	280	15	11.6	99.9	750	999
10307	281	18	8.9	99.9	700	999
12298	292	20	4.4	99.9	650	999
14419	294	20	.4	99.9	600	999
16686	295	22	-4.8	99.9	550	999
19116	291	23	-11.0	-38.2	500	8

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	I/R N
16	260	5	22.8	20.4	1014.20	368
1661	321	14	19.2	18.0	957.42	344
2550	326	12	18.1	16.8	927.86	331
2921	323	12	16.3	15.0	915.72	321
4224	304	13	14.2	12.4	874.03	301
5435	296	14	13.3	1.8	836.72	258
7263	272	15	10.9	-3.3	782.99	236
7706	273	15	11.7	99.9	770.44	210
8103	277	15	12.3	-24.4	759.37	210
8541	281	15	11.4	99.9	747.36	204
10774	282	18	8.1	99.9	688.55	190
11212	286	18	6.6	99.9	677.48	188
14419	294	20	.5	99.9	600.71	170
14888	295	20	-8.6	-33.9	570.89	170
16279	295	22	-3.6	-33.4	559.51	163
16697	295	22	-4.8	99.9	550.55	159
17143	295	22	-5.7	-36.7	541.13	158
17615	295	21	-6.8	-38.6	531.30	154
19823	290	25	-12.8	-33.7	487.05	147

RAWINSONDE RUN AN/GND-4
CAPE CANAVERAL AFS, FLORIDA
1415Z 19 MAY 1975
ASCENT NBR 0332

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HRS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	320	7	27.5	20.5	1014.90	66	17.34	1165.02	361	675		0
1000	339	9	23.8	17.5	980.96	71	14.71	1145.18	342	670	.006	22
2000	338	10	20.6	14.4	947.23	68	12.10	1115.97	321	668	.002	332
3000	336	12	17.6	12.4	914.37	71	10.76	1088.97	307	664	.002	323
4000	332	12	15.1	12.1	882.34	82	10.61	1060.02	301	661	.002	282
5000	319	11	13.4	11.3	851.20	87	10.12	1028.01	291	659	.005	215
6000	295	12	11.4	6.5	820.93	73	7.50	1000.38	269	657	.005	220
7000	289	14	11.6	1.0	791.63	48	5.01	965.37	246	657	.004	249
8000	294	16	12.9	-8.6	763.41	21	2.41	928.14	222	659	.004	331
9000	298	17	10.9	-10.4	736.13	21	2.11	901.54	214	657	.003	342
10000	297	17	8.9	-12.3	709.65	21	1.83	875.35	206	654	.001	247
11000	296	18	7.1	-14.0	683.96	20	1.60	849.33	199	652	.001	275
12000	295	19	5.3	-15.5	659.05	20	1.42	823.56	192	650	.002	282
13000	294	20	4.2	-16.4	634.91	21	1.32	796.79	186	649	.002	255
14000	291	21	1.6	-18.5	611.50	21	1.12	774.76	180	646	.003	253
15000	288	22	-0.4	-20.1	588.76	21	.99	751.49	174	643	.003	254
16000	287	23	-2.7	-22.2	566.72	20	.82	729.49	168	641	.001	229
17000	285	23	-4.9	-24.0	545.32	21	.71	707.86	162	638	.001	242
18000	288	24	-7.2	-24.9	524.55	23	.66	686.72	157	635	.002	315
19000	294	26	-9.6	-25.8	504.41	25	.61	666.39	153	632	.005	350
20000	299	28	-11.6	-27.5	484.88	25	.53	645.49	147	630	.005	344

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HRS	RH PCT
444	331	8	25.3	19.3	1000	69
1914	338	10	20.8	14.4	950	67
3439	334	12	16.4	12.0	900	75
5031	318	11	13.3	11.2	850	87
6699	289	13	11.6	2.1	800	53
8472	297	16	11.9	-9.4	750	21
10353	296	17	8.2	-12.5	700	21
12346	295	19	4.9	-15.8	650	20
14471	289	22	.2	-19.6	600	21
16741	285	23	-4.4	-23.6	550	21
19178	296	26	-10.1	-26.1	500	25

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HRS	I/R N
16	320	7	27.5	20.5	1014.90	361
847	339	9	23.3	18.2	986.20	347
2361	337	11	19.8	14.2	935.29	318
3140	336	12	17.2	12.0	909.05	305
5656	302	11	11.4	9.7	831.26	282
7976	294	15	13.0	-8.6	764.08	222
11239	296	18	6.7	-14.5	677.95	197
12941	294	20	4.3	-16.3	636.32	186

BARINSONE RUN AN/OM-4
CAPE CANAVERAL AFB, FLORIDA
2357Z 19 MAY 1975
ASCENT NBR 0333

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	80	2	24.7	20.4	1013.20	77	17.47	1174.63	365	672	0	0
1000	45	8	23.6	15.4	979.19	60	12.77	1141.72	330	671	.012	35
2000	18	6	21.2	14.1	945.60	64	11.89	1112.12	319	668	.007	269
3000	313	8	19.3	13.6	912.90	70	11.53	1080.55	310	666	.013	265
4000	304	12	17.2	12.4	881.12	73	10.73	1050.55	299	664	.007	267
5000	306	13	14.6	10.4	850.21	76	9.51	1023.45	286	661	.003	320
6000	310	14	13.0	8.5	820.12	75	8.43	993.49	273	659	.005	32
7000	336	14	13.1	-12.7	790.94	15	1.75	961.62	225	659	.007	46
8000	339	16	12.3	-16.2	762.75	12	1.31	930.23	215	658	.003	11
9000	336	16	10.3	-16.3	735.44	14	1.30	903.20	209	656	.002	242
10000	329	16	8.1	-18.1	708.92	14	1.13	877.49	202	653	.003	234
11000	325	17	5.4	-19.3	683.13	15	1.03	853.60	197	650	.003	287
12000	327	18	3.3	-20.8	658.06	15	.91	828.67	190	648	.002	348
13000	328	18	1.7	-23.3	633.75	13	.74	802.74	184	646	.001	100
14000	324	18	.0	-25.2	610.22	13	.62	777.90	177	644	.002	269
15000	318	20	-1.6	-25.5	587.41	14	.61	753.13	172	642	.005	274
16000	315	21	-4.3	-24.2	565.30	19	.69	732.02	168	639	.002	254
17000	310	21	-5.5	-27.1	543.88	16	.53	707.60	161	637	.003	238
18000	301	21	-8.2	-27.5	523.11	19	.52	687.47	157	634	.006	218
19000	296	20	-10.6	-26.9	502.94	25	.55	666.98	152	631	.003	162
20000	295	22	-12.7	-28.9	483.39	24	.46	646.30	147	629	.003	241

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT
394	54	8	24.5	15.6	1000	58
1065	24	7	21.5	14.1	950	63
3397	306	10	18.4	12.9	900	70
4999	306	13	14.6	10.4	850	76
6674	331	14	12.7	-4.8	800	33
8448	338	16	11.7	-16.4	750	12
10323	327	16	7.1	-18.5	700	14
12303	327	18	2.6	-22.2	650	14
14413	321	19	-0.8	-25.8	600	13
16673	312	21	-4.9	-25.7	550	18
18164	296	21	-11.0	-27.4	500	24

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	I/R N
16	80	2	24.7	20.4	1013.20	365
200	55	8	24.7	15.4	1003.69	335
1263	42	8	23.4	14.5	970.27	323
1669	31	7	22.0	14.1	956.64	320
5586	311	14	13.0	8.5	832.40	276
6037	319	14	13.0	8.5	819.03	273
6967	336	14	13.1	-12.4	791.89	225
7458	340	15	12.7	-16.9	777.91	219
9397	338	16	11.9	-16.4	751.81	212
12486	328	18	2.2	-23.0	646.14	187
15208	317	21	-1.9	-25.1	582.75	171
20771	294	25	-13.6	-28.8	488.76	143

RAWINSONDE RUN AN/OMD-4
CAPE CANAVERAL AFS, FLORIDA
0457Z 20 MAY 1975
ASCENT NBR 0334

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DFG
16	0	0	18.1	17.2	1013.50	95	14.63	1203.54	356	665	0	0
1000	41	4	24.7	14.4	979.56	53	11.98	1138.41	324	672	.006	41
2000	18	5	23.2	12.3	946.09	50	10.45	1105.92	308	671	.004	356
3000	353	7	20.2	11.6	913.51	58	10.07	1078.60	300	667	.004	311
4000	339	8	17.8	10.8	881.77	64	9.65	1050.03	292	664	.004	291
5000	333	9	15.4	10.2	850.89	71	9.36	1021.63	284	662	.002	256
6000	10	7	12.9	7.0	820.84	68	7.64	995.02	268	659	.004	95
7000	24	9	11.2	2.9	791.60	57	5.73	966.50	251	657	.004	71
8000	3	10	11.5	99.9	763.31	999	99.99	932.40	226	657	.006	306
9000	346	12	10.9	99.9	735.97	999	99.99	902.57	201	657	.006	297
10000	340	14	9.2	99.9	709.47	999	99.99	875.42	195	655	.004	302
11000	338	15	6.8	99.9	683.76	999	99.99	850.96	190	652	.002	307
12000	336	15	4.5	99.9	658.77	999	99.99	826.53	184	649	.001	291
13000	330	16	2.5	99.9	634.51	999	99.99	802.07	179	647	.003	265
14000	324	17	1.1	99.9	611.01	999	99.99	776.11	173	645	.004	277
15000	321	19	-1.2	-27.0	588.23	12	.54	753.34	171	642	.004	294
16000	320	21	-3.5	-20.1	566.13	26	1.00	730.84	169	640	.002	307
17000	320	21	-5.3	-22.7	544.71	24	.80	708.01	163	638	.001	329
18000	320	22	-7.4	-27.2	523.93	20	.58	686.40	157	635	.001	301
19000	320	23	-9.1	-34.8	503.83	10	.26	664.57	150	633	.002	327
20000	320	25	-11.6	-36.7	484.34	10	.21	645.02	145	630	.003	314

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT
402	83	3	25.5	19.8	1000	72
1879	22	5	23.5	17.5	950	50
3418	346	8	18.9	11.6	900	62
5021	332	9	15.3	10.2	850	72
6697	21	8	11.7	4.0	800	59
8447	353	11	11.4	99.9	750	999
10345	339	14	8.4	99.9	700	999
12373	335	15	3.7	99.9	650	999
14448	322	14	.0	99.9	600	999
16713	320	21	-4.7	-22.4	550	23
19149	320	23	-9.5	-35.6	500	10

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	I/R N
16	0	0	18.1	17.2	1013.50	356
106	99	3	25.7	21.9	1007.15	371
925	43	4	24.8	14.6	982.11	325
2480	3	6	22.0	11.4	930.36	302
3359	347	8	19.1	11.7	902.05	299
5269	332	9	14.9	10.2	844.57	293
5478	346	6	13.8	10.1	836.44	282
7048	24	9	11.1	2.7	790.22	250
7824	7	10	11.5	-2.6	768.22	233
8658	350	12	11.4	99.9	745.23	203
21122	316	27	-13.3	-42.3	463.20	139
21962	999	999	-15.7	-44.7	447.86	136

RAVINSOIDE RUN AN/GMO-4
CAPE CANAVERAL AFS, FLORIDA
0557Z 20 MAY 1975
ASCENT NBR 0335

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HRS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	180	2	17.2	16.4	1013.20	95	13.90	1207.28	353	664	0	0
1000	56	4	24.7	15.9	979.18	58	13.15	1137.19	331	672	.009	17
2000	19	6	23.2	13.6	945.73	55	11.42	1104.92	314	671	.007	345
3000	355	7	19.9	12.4	913.15	62	10.66	1078.99	304	667	.006	295
4000	345	9	17.6	11.8	881.42	69	10.34	1049.73	296	664	.003	308
5000	355	8	14.6	9.2	850.49	70	8.81	1024.7	282	661	.003	162
6000	29	9	12.9	5.7	820.36	61	6.92	994.98	264	659	.008	94
7000	43	11	10.5	3.9	791.13	64	6.16	967.99	254	656	.006	79
8000	10	9	11.0	-8.2	762.80	26	2.55	933.74	224	657	.010	276
9000	329	12	10.1	-16.0	735.45	15	1.37	903.76	210	656	.014	280
10000	331	16	8.7	-20.3	708.95	11	.93	875.78	201	65	.006	318
11000	329	15	6.6	-20.3	683.24	13	.95	850.24	195	652	.001	181
12000	324	14	4.0	-22.0	658.27	13	.82	826.90	189	649	.003	200
13000	317	16	2.1	-24.0	634.00	12	.69	802.04	183	646	.004	272
14000	314	17	.4	-25.8	610.49	12	.59	777.02	177	644	.003	284
15000	320	19	-1.6	-27.0	587.68	12	.53	753.69	171	642	.04	23
16000	324	19	-4.5	-18.0	565.55	34	1.20	732.60	171	639	.003	18
17000	322	20	-6.9	-17.5	544.05	42	1.25	711.08	167	636	.002	285
18000	326	22	-8.2	-21.6	523.22	33	.90	687.40	159	634	.004	5
19000	328	22	-9.7	-26.9	503.08	23	.55	664.93	152	632	.002	15
20000	324	24	-12.2	-34.3	483.57	14	.27	645.49	146	629	.004	279

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HRS	RH PCT
391	102	2	24.8	20.0	1000	75
1868	22	6	23.3	14.0	950	56
3406	351	8	18.8	13.1	900	69
5008	355	8	14.6	9.1	850	70
6682	42	11	11.4	4.9	800	64
8448	341	10	11.6	-17.4	750	12
10325	331	16	8.0	-20.8	700	11
12312	322	14	3.3	-22.6	650	13
14425	315	17	-0.7	-26.6	600	12
16683	323	19	-6.3	-17.7	550	40
19111	328	22	-10.1	-28.9	500	20

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HRS	I/R N
16	180	2	17.2	16.4	1013.20	353
275	129	2	24.7	20.6	1004.04	363
859	63	3	25.0	16.3	982.95	333
2141	15	6	23.1	13.2	941.08	311
2503	5	7	21.5	11.2	929.26	302
2855	357	7	20.3	12.0	917.82	303
4066	345	9	17.5	11.4	879.36	296
4493	345	9	15.9	10.5	866.08	289
6515	40	10	12.1	5.6	805.22	261
6963	43	11	10.5	4.0	792.20	254
7402	37	11	10.6	2.8	779.62	248
7821	22	10	10.8	-6.0	767.81	228
8541	337	10	11.7	-19.4	747.91	210
8842	329	11	10.0	-14.0	739.17	212
11341	328	14	6.5	-23.6	674.64	192
11726	326	14	4.7	-21.5	665.04	191
15338	323	19	-2.6	-24.5	580.13	171
15677	324	19	-3.7	-20.6	572.62	171
16919	322	20	-8.7	-17.4	545.77	167

RAMINSONDE RUN AN/GMD-4
CAPE CANAVERAL AFS, FLORIDA
0857Z 20 MAY 1975
ASCENT NBR 0336

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	280	3	20.2	19.6	1013.90	96	16.85	1193.91	367	667	0	0
1000	271	5	23.3	16.6	979.70	66	13.85	1143.04	337	671	.003	256
2000	326	5	21.7	13.3	946.12	59	11.25	1111.09	314	669	.007	32
3000	342	8	19.5	11.8	913.44	61	10.24	1081.18	302	666	.006	2
4000	350	8	16.4	9.1	881.59	62	8.64	1055.51	287	663	.002	57
5000	7	8	14.1	8.1	850.53	68	8.18	1026.74	279	660	.004	90
6000	24	8	11.3	6.9	820.32	74	7.58	999.99	269	657	.004	117
7000	32	6	9.7	4.1	790.95	68	6.29	970.30	255	655	.007	174
8000	339	6	10.2	99.9	762.50	999	99.99	936.34	220	656	.009	278
9000	317	13	10.1	-19.2	735.10	11	1.02	903.40	208	656	.013	300
10000	316	1	8.1	-17.6	708.60	14	1.18	876.98	203	653	.005	310
11000	315	5	6.3	-22.0	682.87	11	.81	850.95	195	651	.001	167
12000	320	15	4.0	-23.4	657.89	11	.72	826.51	189	649	.002	69
13000	322	17	2.0	-25.6	633.60	11	.60	801.74	182	646	.003	346
14000	327	18	-0.2	-27.4	610.07	11	.51	778.36	177	644	.004	7
15000	333	19	-2.1	-32.2	587.26	8	.34	754.67	170	641	.003	46
16000	336	19	-4.7	-28.8	565.09	13	.46	733.01	166	638	.002	54
17000	337	19	-6.9	-30.0	543.59	14	.41	710.99	161	636	.000	126
18000	333	18	-7.8	-32.8	522.80	11	.31	686.21	155	635	.002	205
19000	329	17	-9.6	-33.4	502.69	12	.30	664.34	150	632	.002	214
20000	332	17	-11.9	-34.8	483.21	13	.26	644.28	145	630	.002	69

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT
411	265	7	22.5	19.2	1000	82
1880	321	4	22.0	13.6	950	59
3414	343	8	18.4	10.7	900	61
5009	8	8	14.0	8.2	850	68
6677	35	7	10.3	5.0	800	70
8436	323	10	10.5	99.9	750	999
10311	316	16	7.6	-19.6	700	12
12297	321	15	2.7	-24.2	650	12
14407	330	18	-0.7	-30.4	600	9
16662	337	19	-6.2	-30.2	550	13
19091	329	17	-9.9	-33.5	500	12

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	I/R N
16	280	3	20.2	19.6	1013.90	367
226	267	9	22.6	19.3	1006.48	359
984	270	5	23.3	16.7	980.24	337
1414	294	4	23.3	14.6	965.70	323
3338	343	8	18.7	10.9	902.59	297
3717	346	8	17.3	10.1	890.53	292
5262	11	8	13.7	8.6	844.37	279
5689	18	8	11.9	7.4	829.55	273
7684	0	5	8.6	1.4	771.37	244
8178	331	7	11.2	99.9	757.54	207
8622	319	11	10.1	-17.6	745.35	211
9532	317	16	9.8	-19.7	721.91	204
10034	316	16	8.0	-17.5	707.71	203
11973	319	15	4.1	-23.3	658.56	189
12337	321	15	2.6	-24.3	649.63	187
13250	323	17	2.0	-25.6	627.67	181
13692	326	18	.3	-27.7	617.26	178
14791	332	19	-1.0	-35.4	591.98	170
15288	335	19	-3.2	-29.0	582.60	170
16772	337	19	-6.3	-30.3	548.44	162

QUALITY OF THE
GE IS POOR

RAVISONDE RUN AN/GMD-4
CAPE CANAVERAL AFS, FLORIDA
1057Z 20 MAY 1975
ASCENT NBR 0337

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	280	4	20.7	20.0	1014.60	96	17.26	1192.42	369	668	0	0
1000	283	9	23.1	17.0	980.52	69	14.32	1144.22	340	671	.008	285
2000	292	7	22.0	13.5	946.91	59	11.38	1110.77	315	669	.004	73
3000	326	7	19.3	11.3	914.18	60	9.93	1082.94	301	666	.007	44
4000	355	8	16.2	12.7	882.31	80	11.00	1055.79	302	663	.006	53
5000	17	9	14.2	9.2	851.28	72	8.78	1026.85	282	660	.005	84
6000	32	8	11.7	9.2	821.09	85	8.92	998.72	277	658	.004	132
7000	358	7	9.9	2.9	791.74	62	5.77	971.10	252	655	.007	275
8000	319	13	11.9	-15.6	763.36	13	1.38	932.09	216	658	.014	287
9000	313	16	10.8	-15.7	736.01	14	1.38	902.14	209	656	.006	292
10000	314	16	8.5	-18.2	709.50	13	1.12	876.97	202	654	.001	6
11000	315	16	6.8	-20.7	683.79	12	.91	850.33	195	652	.000	83
12000	318	16	4.4	-22.0	658.80	13	.82	826.51	189	649	.002	4
13000	326	18	1.9	-23.4	634.53	13	.73	803.13	184	646	.005	29
14000	340	18	-0.0	-24.1	610.97	14	.69	778.85	178	644	.007	53
15000	347	19	-1.9	-26.4	588.14	13	.56	755.09	172	642	.004	54
16000	347	20	-3.7	-27.7	566.00	13	.50	731.41	166	640	.001	319
17000	340	18	-5.1	-28.7	544.57	14	.46	707.58	161	638	.004	221
18000	333	18	-7.3	-29.7	523.83	15	.42	686.29	156	635	.004	237
19000	338	17	-8.5	-31.7	503.73	13	.35	662.97	150	634	.003	79
20000	342	18	-10.4	-33.0	484.30	14	.31	641.91	145	631	.002	40

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT
433	284	9	23.8	22.0	1000	90
1904	289	7	22.3	13.8	950	59
3436	339	7	18.2	11.7	900	66
5033	17	9	14.1	9.3	850	73
6704	14	7	10.5	3.3	800	61
8469	314	15	11.0	-17.7	750	12
10346	315	16	8.2	-18.9	700	13
12334	320	17	3.6	-22.8	650	12
14446	345	19	-0.7	-25.7	600	13
16706	343	19	-4.9	-28.6	550	14
19144	339	17	-8.8	-32.0	500	13

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	I/R N
16	280	4	20.7	20.0	1014.60	369
100	289	10	23.4	21.8	1011.63	375
432	284	9	23.8	22.0	1000.06	373
1328	283	8	23.3	13.6	969.39	320
2261	300	7	21.2	12.8	938.30	311
2717	316	7	19.5	12.0	923.35	306
3582	342	7	17.8	12.0	895.53	301
3990	354	8	16.2	12.7	882.63	302
4938	16	9	14.3	9.1	853.18	282
5875	31	8	11.8	10.3	824.81	282
6613	20	7	10.7	3.4	803.01	255
7059	355	7	9.7	2.9	790.04	252
7511	331	10	11.2	99.9	777.10	212
7995	319	13	11.9	-15.5	763.49	216
8434	314	15	11.0	-17.9	751.38	212
9446	314	16	10.2	-17.6	724.10	205
9809	314	16	8.6	-17.8	714.51	204
13155	328	18	1.5	-23.4	630.84	183

RAWINSONDE RUN AN/GMD-4
CAPE CANAVERAL AFS, FLORIDA
1405Z 20 MAY 1975
ASCENT NBR 0338

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HBS	RH PCT	AB NUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	320	5	27.3	19.4	1015.60	62	16.27	1167.97	355	675	0	0
1000	317	7	23.4	15.6	981.61	61	12.92	1145.31	332	671	.003	308
2000	314	6	21.4	14.4	947.90	64	12.05	1113.77	320	669	.001	167
3000	343	7	19.3	12.0	915.15	63	10.41	1083.72	304	666	.006	41
4000	7	7	16.4	8.4	883.24	59	8.25	1057.55	286	663	.005	74
5000	19	6	14.0	9.0	852.12	72	8.68	1028.58	262	660	.003	147
6000	23	7	12.1	4.0	821.89	57	6.18	999.99	261	658	.003	39
7000	7	9	10.3	.0	792.49	49	4.68	971.13	245	656	.006	326
8000	331	15	11.0	99.9	764.05	999	99.99	936.33	212	657	.015	292
9000	323	20	10.4	99.9	736.63	999	99.99	904.86	202	656	.009	303
10000	325	20	8.7	99.9	710.09	999	99.99	877.71	196	654	.001	43
11000	330	20	6.0	99.9	684.29	999	99.99	853.93	190	651	.001	52
12000	335	20	3.7	99.9	659.20	999	99.99	829.45	185	648	.003	62
13000	342	20	2.5	99.9	634.89	999	99.99	802.42	179	647	.004	76
14000	348	20	.2	99.9	611.34	999	99.99	779.22	174	644	.004	68
15000	351	19	-2.0	99.9	588.47	999	99.99	756.17	168	641	.002	135
16000	346	18	-4.4	99.9	566.28	999	99.99	734.19	164	639	.003	223
17000	345	19	-4.8	99.9	544.83	999	99.99	707.32	158	638	.002	322
18000	342	20	-6.6	99.9	524.10	999	99.99	684.92	153	636	.002	288
19000	337	19	-8.7	99.9	504.02	999	99.99	664.02	148	633	.003	240
20000	341	20	-11.6	99.9	484.54	999	99.99	645.40	144	630	.001	30

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HBS	RH PCT
464	323	7	25.0	16.5	1000	59
1934	313	6	21.5	14.5	950	64
3466	355	7	18.0	9.9	900	59
5061	20	6	13.9	8.6	850	71
6730	15	9	10.9	.4	800	49
8493	324	18	11.1	99.9	750	999
10368	327	20	7.7	99.9	700	999
12350	337	20	3.2	99.9	650	999
14461	350	20	-0.9	99.9	600	999
16718	345	19	-4.4	99.9	550	999
19159	336	19	-9.1	99.9	500	999

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS HBS	I/R N
16	320	5	27.3	19.4	1015.60	355
1545	312	7	21.9	15.5	963.11	328
2779	335	7	20.2	12.8	922.31	308
3180	348	7	18.7	11.4	909.36	301
4959	19	6	14.1	9.2	853.38	283
7229	358	10	9.8	-0.1	785.89	244
7647	340	12	10.5	-10.8	773.98	224
8125	328	16	11.2	99.9	760.56	208
8559	324	18	11.1	-22.5	748.60	209
9068	323	20	10.3	99.9	734.79	201
16059	346	18	-4.6	99.9	565.00	163
16890	345	19	-4.6	99.9	547.36	158
19627	338	19	-10.1	99.9	491.74	145

RAWINSONDE RUN AN/GMD-4
CAPE CANAVERAL AFS, FLORIDA
1557Z 20 MAY 1975
ASCENT NBR 0339

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	320	4	30.4	19.4	1015.60	52	16.08	1155.78	350	679	0	0
1000	331	8	25.1	16.2	981.82	58	13.35	1138.79	332	673	.008	341
2000	340	9	21.5	15.0	948.24	67	12.59	1113.42	323	669	.002	42
3000	348	8	17.9	13.4	915.41	75	11.44	1088.83	312	665	.002	106
4000	349	7	15.2	13.7	883.37	90	11.76	1060.01	308	662	.002	161
5000	343	6	13.7	10.6	852.19	82	9.69	1029.04	288	660	.002	195
6000	346	5	11.7	7.1	821.94	73	7.65	1000.68	270	657	.001	144
7000	15	11	9.4	4.6	792.52	72	6.55	973.18	257	655	.011	36
8000	350	14	8.3	-0.4	763.96	54	4.58	942.80	239	654	.010	305
9000	330	19	8.7	-13.3	736.35	19	1.48	909.02	213	654	.013	291
10000	325	20	6.4	-14.7	709.66	20	1.51	883.33	206	651	.003	274
11000	328	18	4.7	-14.2	683.74	24	1.59	856.37	201	649	.003	123
12000	334	17	2.6	-16.5	658.59	23	1.33	831.39	194	647	.004	100
13000	346	17	.5	-16.9	634.20	26	1.28	806.70	188	644	.006	63
14000	355	18	-0.4	-16.2	610.56	29	1.37	779.12	182	643	.005	62
15000	353	18	-2.7	-19.1	587.69	27	1.08	756.30	175	641	.001	276
16000	353	18	-4.8	-22.5	565.50	23	.81	733.59	169	638	.001	172
17000	355	19	-6.1	-23.8	544.03	23	.72	709.28	163	637	.002	27
18000	349	20	-7.1	-26.7	523.28	19	.56	684.86	156	635	.004	281
19000	345	18	-8.9	-28.7	503.22	18	.47	663.26	151	633	.004	198
20000	355	17	-10.9	-29.9	483.78	19	.42	642.45	146	631	.005	103

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT
468	327	6	26.6	17.0	1000	56
1944	339	9	21.7	15.1	950	66
3472	350	8	16.6	13.1	900	80
5063	343	6	13.7	10.7	850	82
6731	15	9	9.7	7.4	800	86
8485	338	17	8.1	-4.1	750	42
10349	325	20	5.7	-15.3	700	20
12324	338	17	1.9	-16.9	650	23
14427	355	18	-1.4	-17.9	600	29
16681	356	19	-5.7	-23.5	550	23
19118	346	18	-9.3	-28.8	500	19

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	I/R N
16	320	4	30.4	19.4	1015.60	350
400	326	6	26.7	17.1	1002.37	340
1209	332	9	24.4	15.9	974.74	330
1679	336	9	22.6	15.5	958.94	326
2241	342	9	20.7	14.7	940.28	320
2899	347	8	18.2	13.5	916.71	312
4054	349	7	15.1	13.7	881.67	308
6590	3	6	10.5	4.9	804.78	260
6662	15	8	9.8	8.3	802.37	271
7056	15	11	9.3	4.0	790.91	255
8470	339	17	8.0	-3.5	750.85	229
8987	330	19	8.8	-13.3	736.70	213
13546	352	18	-0.5	-16.3	621.20	185
18292	344	19	-7.4	-27.2	517.56	155
18806	344	18	-8.5	-28.5	507.07	152

RAWINSONDE RUN AN/GMD-4
CAPE CANAVERAL AFS, FLORIDA
0514Z 21 MAY 1975
ASCENT NBR 0340

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT	AB HUM G/M3	DENSITY G/M3	I/R N	VS KTS	SHEAR /SEC	DEG
16	0	0	22.2	20.6	1014.90	91	17.78	1186.52	370	669	0	0
1000	53	7	24.7	20.3	980.91	76	17.29	1136.90	355	672	.012	43
2000	54	7	21.2	18.4	947.36	85	15.71	1111.80	341	668	.000	229
3000	45	7	19.6	12.4	914.65	63	10.68	1082.02	305	667	.002	344
4000	32	9	17.4	10.1	882.81	62	9.28	1052.97	291	664	.004	350
5000	23	11	15.4	7.0	851.63	7	7.55	1024.02	274	662	.005	353
6000	18	12	13.7	5.0	821.77	26	6.81	993.91	262	660	.003	336
7000	12	13	11.8	2.7	792.59	54	5.65	965.45	250	658	.002	306
8000	16	13	9.9	1.1	764.22	54	5.10	937.35	240	655	.001	
9000	20	14	8.7	-5.2	736.72	39	3.45	908.47	224	654	.002	64
10000	19	15	7.3	-13.1	710.05	22	1.72	880.98	207	652	.003	14
11000	19	16	6.1	-11.6	684.22	27	1.96	852.56	202	651	.001	19
12000	23	16	4.9	-16.0	659.23	21	1.41	825.24	193	650	.002	147
13000	25	14	3.5	-29.3	635.04	7	.46	799.33	181	648	.003	182
14000	19	13	1.6	99.9	611.58	999	99.99	775.45	174	646	.003	257
15000	15	14	.0	99.9	588.84	999	99.99	750.97	167	644	.002	329
16000	15	15	-1.0	99.9	566.86	999	99.99	725.55	162	643	.002	19
17000	14	17	-2.5	99.9	545.61	999	99.99	702.28	156	641	.003	2
18000	8	17	-5.1	99.9	524.98	999	99.99	682.30	152	638	.003	299
19000	5	17	-7.4	99.9	504.97	999	99.99	661.93	147	635	.002	241
20000	7	16	-9.7	99.9	485.55	999	99.99	642.13	143	632	.001	112

MANDATORY LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	RH PCT
442	53	7	24.5	20.1	1000	76
1918	54	7	21.3	19.0	950	87
3452	39	8	18.4	11.7	900	65
5052	23	11	15.2	6.8	850	57
6731	13	13	12.4	3.4	800	54
8497	18	13	9.4	-0.6	750	50
10355	19	16	6.9	-12.3	700	44
12353	24	15	4.4	-19.8	650	16
14475	15	13	.6	99.9	600	999
16753	14	16	-2.1	99.9	550	999
19208	5	16	-8.0	99.9	500	999

SIGNIFICANT LEVELS

ALTITUDE FEET	DIR DEG	SPEED KTS	TEMP DEG C	DEW PT DEG C	PRESS MBS	I/R N
16	0	0	22.2	20.6	1014.90	370
197	52	7	24.4	20.0	1008.53	361
978	53	7	24.8	20.3	981.67	355
1897	54	7	21.3	19.2	950.80	346
2720	49	7	20.3	12.9	923.74	308
7817	15	13	10.1	1.8	769.36	243
9620	20	15	7.7	-13.9	720.11	209
11396	20	16	5.5	-11.1	674.24	200
13125	25	14	3.4	-31.3	632.07	180
13819	20	13	1.9	-32.0	615.80	176
14613	15	13	.4	99.9	597.56	169
16154	15	15	-1.1	99.9	563.33	161

APPENDIX D
WINDSONDE DATA

PREC.

TEST NBR. 07415 06918
 WINDSONDE
 CAPE CANAVERAL AFS. FLA.
 0857Z 20 MAY 1975
 ASCENT NBR. 0336

ALTITUDE FEET	DIR DEG	SPEED KTS	SHEAR /SEC	DIR
16	280	3	0	0
1000	260	5	.004	234
2000	332	5	.009	28
3000	340	8	.006	359
4000	350	8	.002	87
5000	9	8	.005	84
6000	21	8	.003	119
7000	44	7	.005	142
8000	333	6	.013	275
9000	318	14	.014	307
10000	316	17	.005	309
11000	314	15	.003	159
12000	321	15	.003	61
13000	321	17	.004	326
14000	327	19	.004	9
15000	333	18	.003	72
16000	337	19	.003	35
17000	337	19	.000	232
18000	333	18	.003	197
19000	329	17	.002	222
20000	330	16	.002	136

APPENDIX E
JIMSPHERE DATA

PRECEDING PAGE BLANK NOT FILMED

TEST NBR 7415
JIMSPHERE WIND DATA
CAPE CANAVERAL AFS, FLA.
0157Z 20 MAY 1975

ALTITUDE FEET	DIR DEG KTS	SPEED	SHEAR /SEC	ASCENT FPS
16	80.0	2.00	0	99.94
500	52.0	8.00	0	99.94
1000	111.8	6.34	0	16.6
1500	17.2	7.22	.0338	18.4
2000	15.4	9.41	.0073	17.9
2500	19.5	5.92	.0117	17.0
3000	359.6	4.56	.0077	16.3
3500	342.9	6.45	.0082	17.1
4000	339.0	8.53	.0074	16.3
4500	333.6	11.90	.0117	16.6
5000	315.9	11.55	.0122	16.5
5500	322.0	12.32	.0050	15.5
6000	323.2	12.37	.0008	14.7
6500	330.5	13.20	.0062	16.9
7000	354.9	14.21	.0199	16.0
7500	10.5	16.87	.0167	15.7
8000	346.2	15.45	.0234	16.1
8500	340.4	13.68	.0078	17.7
9000	325.9	16.82	.0167	19.1
9500	330.6	14.09	.0101	18.3
10000	336.3	15.34	.0065	17.4
10500	337.5	18.77	.0117	17.8
11000	332.2	17.41	.0073	18.6
11500	336.1	20.72	.0120	18.6
12000	340.8	21.85	.0070	17.9
12500	334.8	18.71	.0128	17.1
13000	325.3	15.69	.0140	17.5
13500	314.5	14.09	.0110	17.1
14000	312.2	14.80	.0030	16.5
14500	311.0	18.95	.0140	15.6
15000	313.8	19.66	.0040	15.0
15500	311.7	22.68	.0105	15.8
16000	308.1	22.80	.0047	16.0
16500	301.2	21.08	.0108	16.7
17000	307.4	21.97	.0084	16.6
17500	310.8	22.32	.0048	16.3
18000	305.9	23.27	.0074	16.6
18500	299.2	24.57	.0103	16.7
19000	307.8	24.45	.0123	17.5

TEST NBR 7415
 JIMSPHERE WIND DATA
 CAPE CANAVERAL AFS, FLA.
 0257Z 20 MAY 1975

ALTITUDE FEET	DIR DEG KTS	SPEED	SHEAR /SEC	ASCENT FPS
16	80.0	2.00	0	99.94
500	52.0	8.00	0	99.94
1000	97.2	4.91	0	17.3
1500	29.5	6.63	.0223	17.6
2000	21.8	8.17	.0061	17.5
2500	15.0	7.52	.0037	17.8
3000	352.3	7.05	.0099	18.4
3500	328.0	7.70	.0107	18.6
4000	338.6	8.59	.0059	18.1
4500	328.0	11.84	.0126	19.1
5000	323.1	9.77	.0075	18.7
5500	321.0	11.01	.0044	19.4
6000	322.6	11.31	.0014	19.1
6500	318.6	12.20	.0040	17.0
7000	2.8	11.43	.0300	16.8
7500	24.9	18.71	.0311	17.0
8000	356.3	15.28	.0306	17.0
8500	348.5	13.38	.0090	16.3
9000	337.6	11.37	.0104	15.0
9500	334.9	11.19	.0020	16.4
10000	337.6	15.04	.0132	17.6
10500	338.1	15.69	.0022	17.0
11000	343.5	18.12	.0099	17.9
11500	344.4	19.89	.0060	17.6
12000	344.7	19.42	.0015	17.6
12500	339.9	16.52	.0111	17.7
13000	324.8	13.74	.0163	14.9
13500	318.3	14.27	.0056	15.3
14000	309.9	15.87	.0091	15.8
14500	312.0	18.89	.0104	16.7
15000	317.8	19.77	.0065	15.9

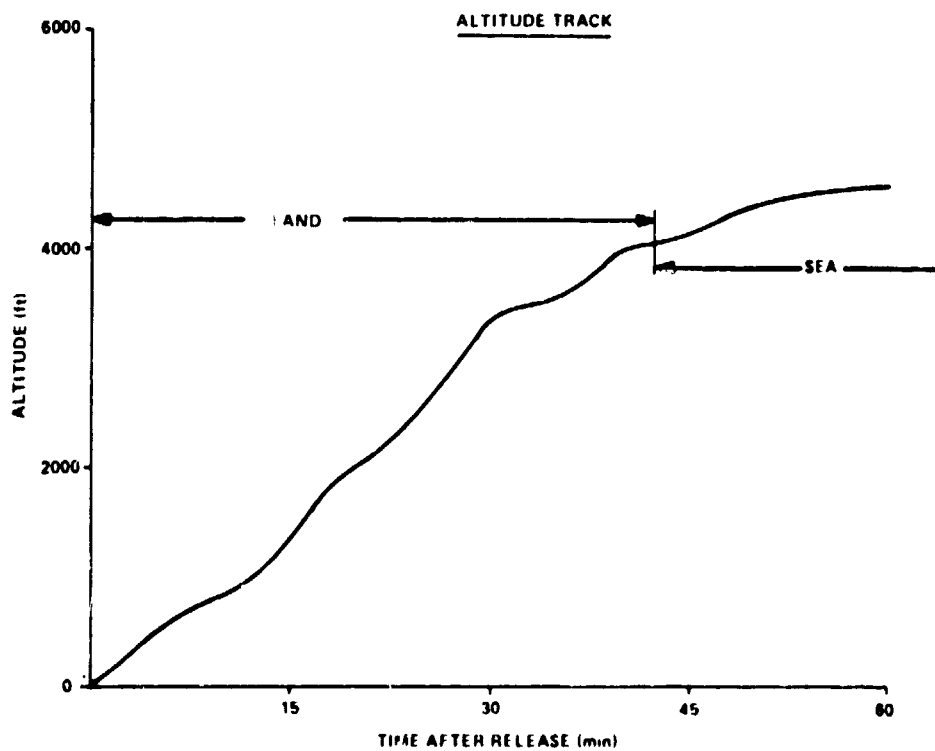
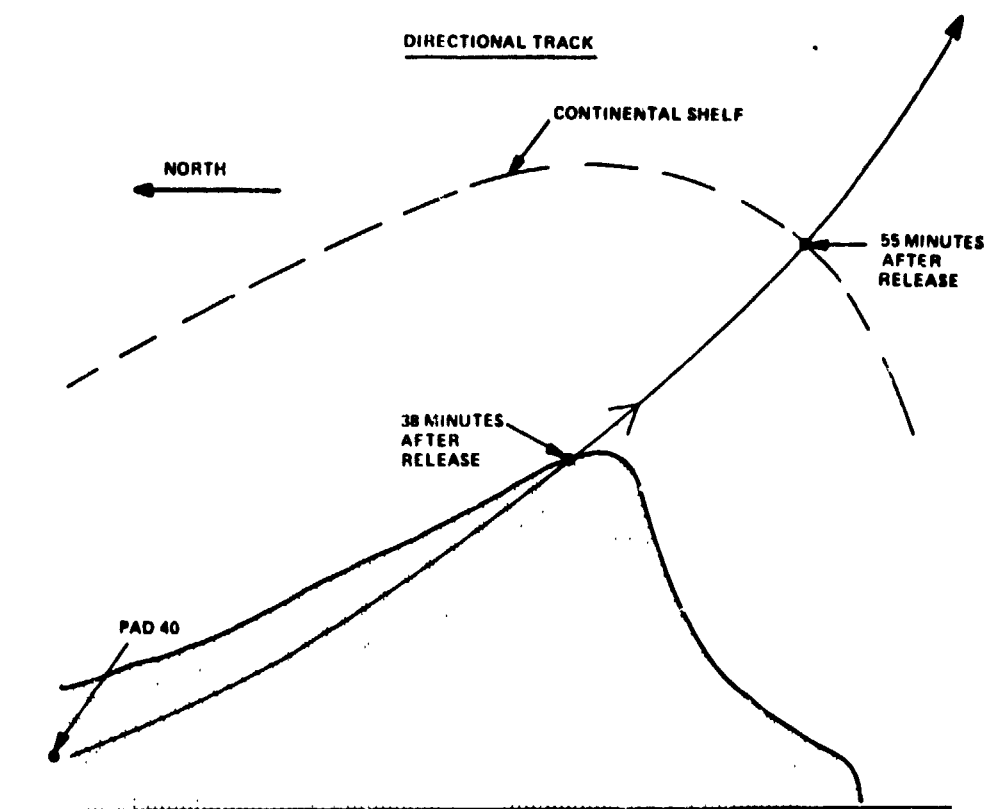
TEST NBR 7415
 JIMSPHERE WIND DATA
 CAPE CANAVERAL AFS, FLA.
 0827Z 20 MAY 1975

ALTITUDE FEET	DIR DEG	SPEED KTS	SHEAR /SEC	ASCENT FPS
16	180.0	2.00	0	99.98
500	89.0	2.00	0	99.98
1000	234.3	6.93	0	16.9
1500	269.7	1.30	.0200	16.4
2000	39.5	1.84	.0097	16.1
2500	343.1	7.34	.0221	17.0
3000	330.0	8.11	.0064	17.6
3500	336.8	8.17	.0032	16.7
4000	352.0	7.64	.0072	17.2
4500	352.3	7.28	.0012	16.2
5000	358.7	7.87	.0036	16.7
5500	20.9	8.53	.0108	17.5
6000	30.1	4.97	.0125	16.5
6500	22.6	6.04	.0044	17.7
7000	42.6	9.30	.0140	16.4
7500	52.4	10.07	.0062	16.3
8000	337.5	6.75	.0358	17.5
8500	315.3	10.12	.0156	15.6
9000	326.6	15.45	.0198	17.6
9500	327.6	14.74	.0027	15.9
10000	324.5	14.98	.0029	16.0
10500	320.1	14.57	.0040	16.0
11000	313.6	16.05	.0076	18.8
11500	318.2	15.28	.0049	16.0
12000	309.5	15.04	.0077	16.6
12500	321.6	14.68	.0107	15.8
13000	320.8	16.52	.0061	16.1
13500	321.3	17.41	.0032	16.4
14000	323.3	18.12	.0032	16.6
14500	332.3	20.78	.0136	16.6
15000	333.2	20.60	.0012	16.3
15500	337.0	19.54	.0058	15.2
16000	335.4	18.12	.0052	15.8

TEST NBR 7415
JIMSPHERE WIND DATA
CAPE CANAVERAL AFS, FLA.
1057Z 20 MAY 1975

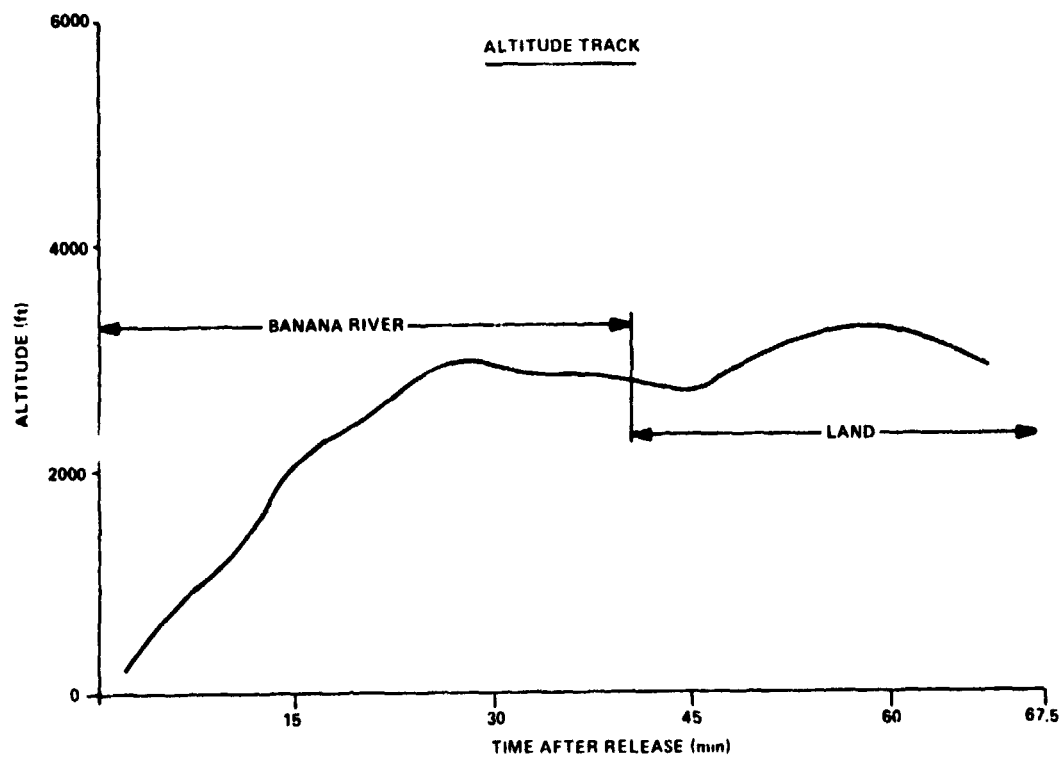
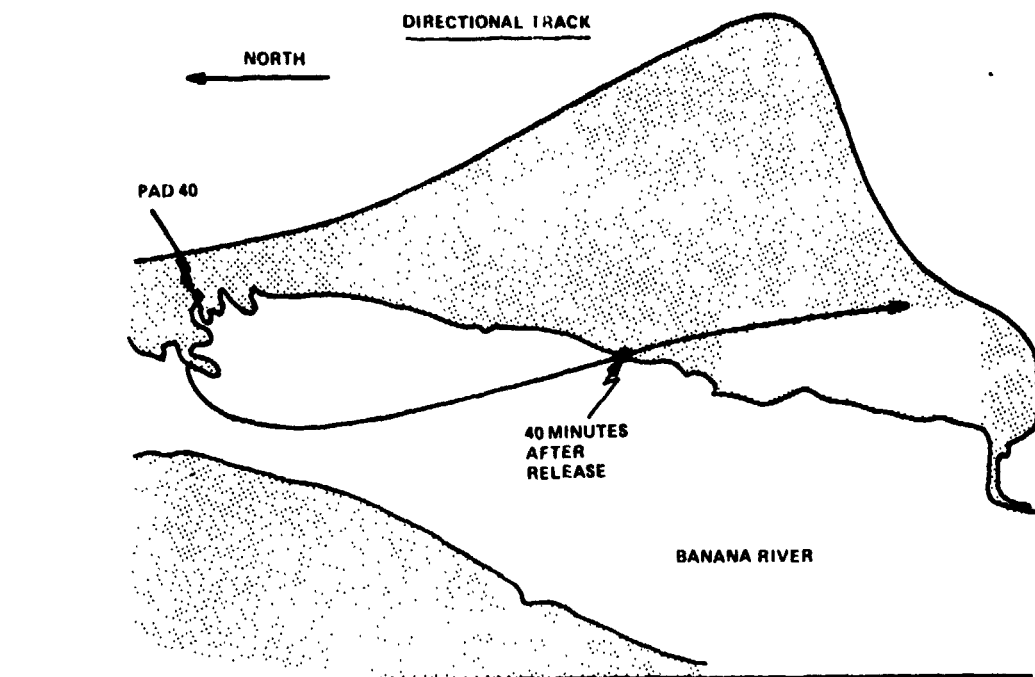
ALTITUDE FEET	DIR DEG	SPEED KTS	SHEAR /SEC	ASCENT FPS
16	280.0	3.00	0	99.98
500	264.0	7.00	0	99.98
1000	262.1	6.51	0	17.0
1500	274.9	3.37	.0113	17.4
2000	355.3	5.27	.0190	17.1
2500	308.6	7.52	.0181	17.2
3000	339.1	7.28	.0133	16.3
3500	328.5	8.70	.0069	17.3
4000	350.8	10.07	.0132	17.0
4500	360.0	8.05	.0084	17.3
5000	24.4	9.59	.0136	16.1
5500	20.2	9.89	.0025	17.5
6000	32.0	11.07	.0082	18.5
6500	40.2	8.76	.0092	17.5
7000	44.6	6.45	.0079	16.6
7500	57.4	7.64	.0066	15.6
8000	309.0	9.71	.0479	17.5
8500	312.7	14.15	.0151	15.9
9000	306.5	17.11	.0116	16.7
9500	315.0	17.47	.0095	16.4
10000	312.5	16.76	.0014	16.3
10500	313.7	16.05	.0027	17.1
11000	312.8	17.23	.0042	17.3
11500	315.2	17.17	.0024	16.5
12000	314.9	17.11	.0004	16.6
12500	309.5	18.47	.0071	16.9
13000	317.7	18.95	.0093	16.2
13500	325.1	18.95	.0082	16.7
14000	335.2	20.78	.0133	17.0
14500	336.7	18.89	.0067	17.1
15000	337.9	19.07	.0014	16.5
15500	332.9	18.83	.0056	16.9
16000	339.3	19.36	.0073	16.9
16500	337.3	19.24	.0023	17.2
17000	336.7	21.20	.0066	16.2
17500	332.2	16.64	.0159	17.2

APPENDIX F
TETROON TRACKS



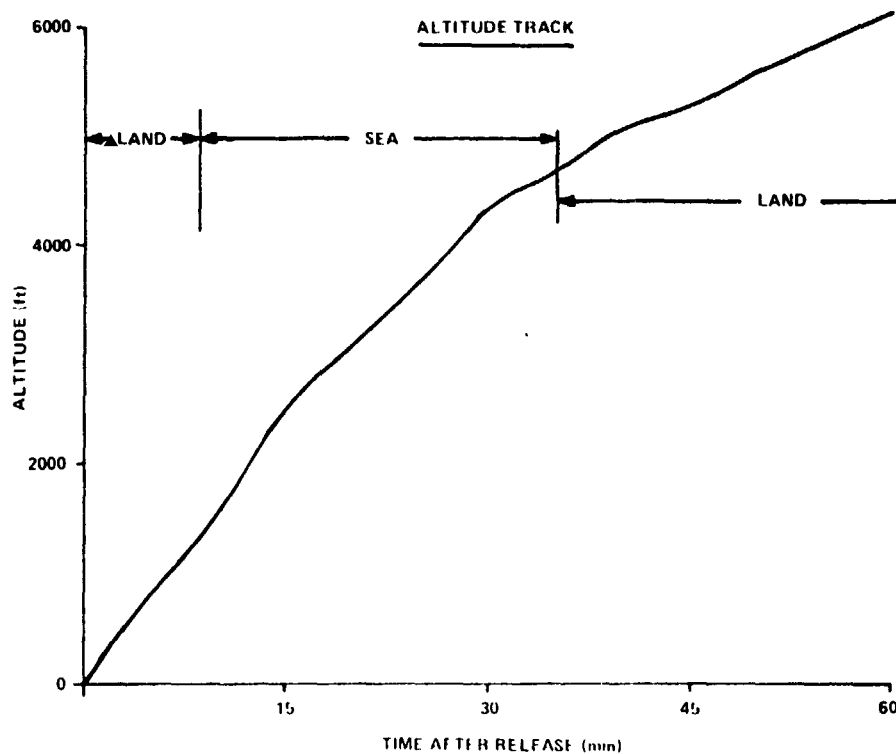
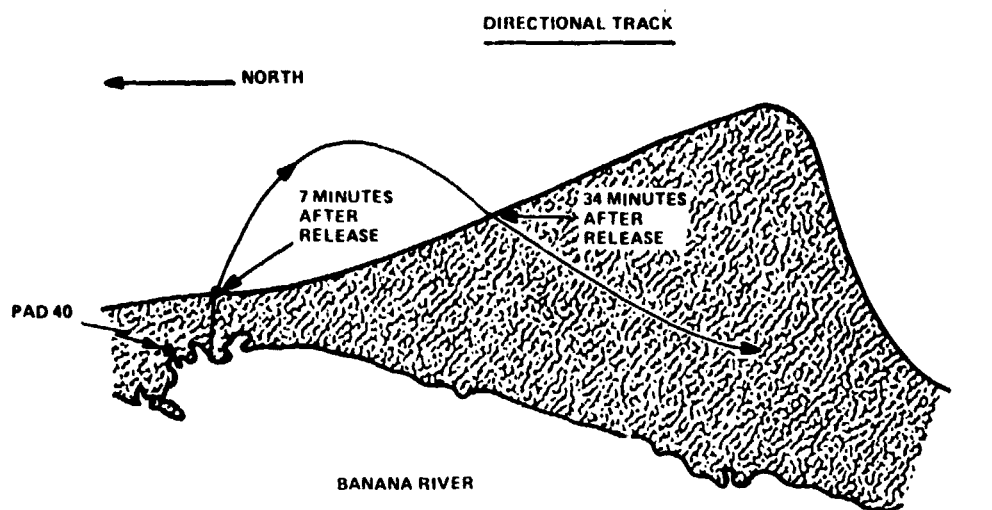
KSC TETROON DIRECTIONAL AND ALTITUDE TRACKS
 RELEASE DATE 19 MAY 1975
 TIME 1007 EDT (0637 Z)
 T 23 HR, 57 MIN

SAI 0732



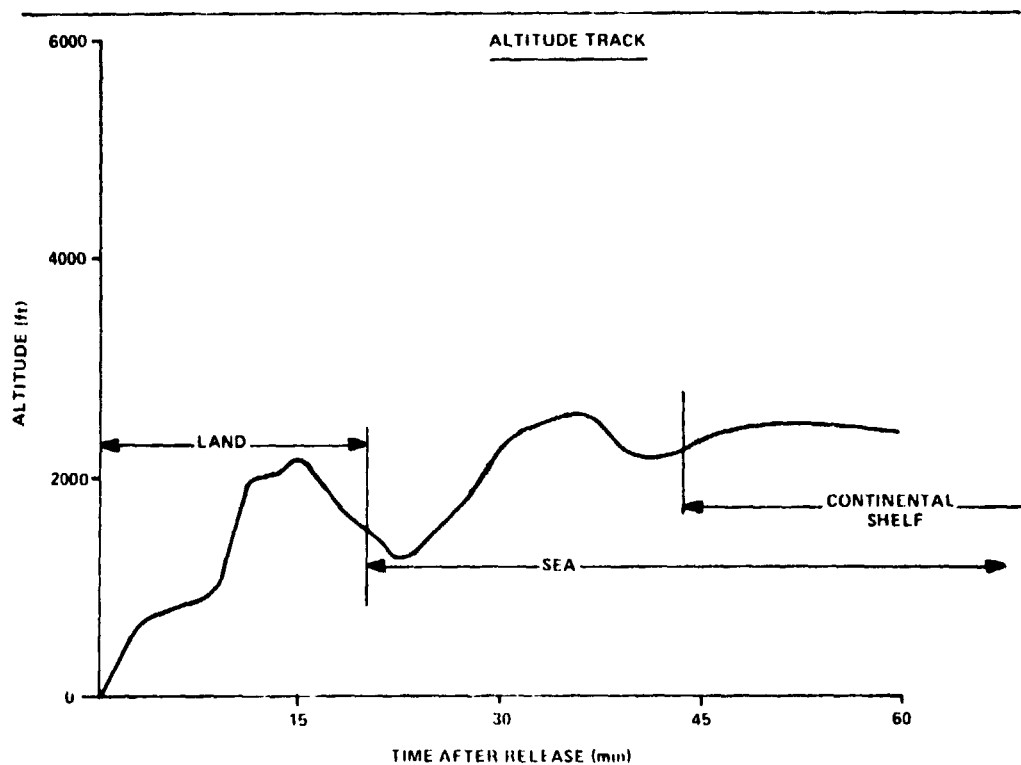
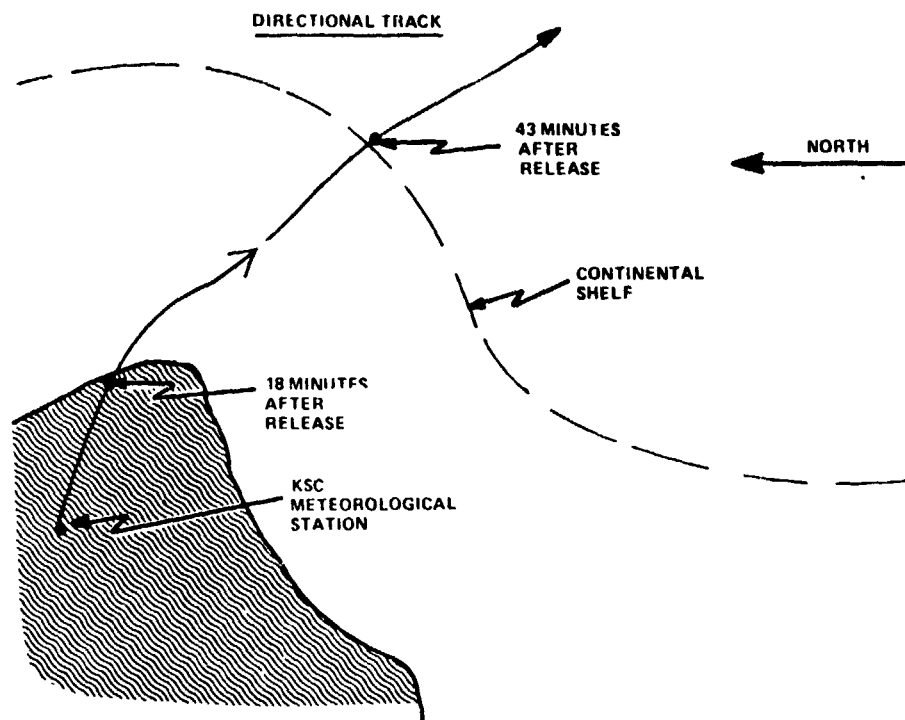
KSC TETROON DIRECTIONAL AND ALTITUDE TRACKS
 RELEASE DATE: 20 MAY 1975
 TIME: 0135 EDT (0535 Z)
 T 8 Hr., 29 MIN

SAI-0733



KSC THROON DIRECTIONAL AND ALTITUDE TRACKS
 RELEASE DATE 20 MAY 1975
 TIME 0756 EDT (1156 Z)
 T 2 HR 8 MIN

SAI 0730



KSC TF TROON DIRECTIONAL AND ALTITUDE TRACKS
 RELEASE DATE: 20 MAY 1975
 TIME: 1107 EDT (1507 Z)
 T + 1 HR, 3 MIN

SAI 0731

APPENDIX G
TOWER DATA

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Symbols and Units Used in Tower Data
Computer Printout

<u>Symbol</u>	<u>Definition</u>	<u>Units</u>
DIR	Wind Direction	Degrees measured clockwise from north (00)
DIR DEV	Standard Deviation of Wind Azimuth Angle for Specified Data Sampling interval	Degrees
DP	Dew Point	Deg. Farenheit (°F)
GST	Highest wind speed during specified data sampling interval	Knots
INT	Data Sampling Interval	Minutes
Lapse Rate	Temperature Difference between the 54' and 6' levels	°F
RH	Relative Humidity	Percent
SPD	Wind Speed	Knots
TT	Temperature	°F
5 PPM	Downwind distance at which the ground level pollutant concentration is 5 parts per million (5 PPM) for an assumed ground level emission rate of 1,000 pounds per minute.	Miles
10 PPM	Downwind distance at which the ground level pollutant concentration is 10 parts per million (10 PPM) for an assumed ground level emission rate of 1,000 pounds per minute.	
99, 99.9 999 999.9	Missing Data	

WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INI	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT 54FT	LAPSE	5	25	DIR	54 FT
(Z)				NR	DIR	SPD	DIR	SPD	DIR	DP	DP	PPM	PPM	DEV	TT
						(295)		(394)	(492)						TT
75	5	20	330	30	106	165	2	99	139	6	6 999	99	99	99	99
75	5	20	400	30	106	161	2	99	143	6	6 999	99	99	99	99
75	5	20	430	30	106	163	2	99	138	6	6 999	99	99	99	99
75	5	20	500	30	106	185	2	99	155	5	6 999	99	99	99	99
75	5	20	530	30	106	180	2	99	175	5	6 999	99	99	99	99
75	5	20	600	30	106	177	2	99	169	5	5 999	99	99	99	99
75	5	20	630	30	106	201	2	99	183	5	6 999	99	99	99	99
75	5	20	700	30	106	206	2	99	189	6	6 999	99	99	99	99
75	5	20	730	30	106	256	4	99	243	6	10 999	99	99	99	99
75	5	20	830	30	106	263	5	99	256	6	9 999	99	99	99	99
75	5	20	900	30	106	270	4	99	263	6	9 999	99	99	99	99
75	5	20	930	30	106	270	4	99	264	5	8 999	99	99	99	99
75	5	20	1000	30	106	275	3	99	268	5	9 999	99	99	99	99
75	5	20	1030	30	106	285	3	99	277	5	8 999	99	99	99	99
75	5	20	1100	30	106	293	3	99	279	4	7 999	99	99	99	99
75	5	20	1130	30	106	290	2	99	280	3	5 999	99	99	99	99
75	5	20	1200	15	106	288	4	99	279	4	7 999	99	99	99	99
75	5	20	1215	15	106	293	4	99	282	4	7 999	99	99	99	99
75	5	20	1230	15	106	291	4	99	286	4	6 999	99	99	99	99
75	5	20	1245	15	106	304	4	99	295	5	7 999	99	99	99	99
75	5	20	1300	15	106	295	4	99	287	4	7 999	99	99	99	99
75	5	20	1315	15	106	293	4	99	284	5	7 999	99	99	99	99
75	5	20	1330	15	106	300	5	99	294	5	8 999	99	99	99	99
75	5	20	1345	15	106	308	4	99	298	5	7 999	99	99	99	99

TEST NBR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT 54FT	LAPSE	5	25	DIR	54 FT
(12)				NBR	DIR	SPD	GST	DIR	SPD	GST	TT	DP	PPM	PPM	DEV
							(295)								
75	5	20	1400	15	106	300	4 99 295	5 7 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1417	15	106	308	3 99 299	4 6 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1430	15	106	323	4 99 315	5 7 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1445	15	106	287	4 99 281	4 7 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1500	15	106	287	4 99 277	4 7 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1515	15	106	272	4 99 266	5 7 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1530	15	106	291	4 99 284	4 9 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1545	15	106	341	5 99 327	6 9 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1600	15	106	340	5 99 330	6 10 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1615	15	106	333	6 99 326	8 11 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1630	15	106	332	6 99 327	8 13 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1645	15	106	348	6 99 336	8 12 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1700	15	106	345	6 99 332	8 13 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1715	15	106	26	9 99 18	9 16 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1730	15	106	24	9 99 9	9 14 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1800	30	106	360	6 99 341	9 15 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1830	30	106	23	10 99 7	10 16 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1841	30	106	19	9 99 2	9 15 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1900	30	106	26	9 99 13	8 17 999	99 999	99 999	99 999	999	999	999	999
75	5	20	1930	30	106	30	8 99 16	9 15 999	99 999	99 999	99 999	999	999	999	999
75	5	20	2000	30	106	26	9 99 13	10 15 999	99 999	99 999	99 999	999	999	999	999
75	5	20	2030	30	106	31	8 99 16	9 13 999	99 999	99 999	99 999	999	999	999	999
75	5	20	2100	30	106	26	8 99 13	9 14 999	99 999	99 999	99 999	999	999	999	999
75	5	20	2130	30	106	24	8 99 9	8 14 999	99 999	99 999	99 999	999	999	999	999

TEST NR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INI	TWR	12 FT	54 FT	162 FT	204 FT	6FT 54FT	LAPSE	5	25	DIR	54 FT							
			(Z)	NBR	DIR	SPD	GST	DIR	SPD	GST	TT	DP	PPH	PPH	DEV	TT						
							(295)	(394)	(492)		RATE			PPH	DEV	TT						
75	5	20	330	30	110	167	2	3 164	5	5 149	6	7 146	6	6 73	66	63	2.8	35.7	15.7	4.0	76	65
75	5	20	400	30	110	157	2	2 161	5	5 145	6	6 144	6	6 73	65	63	3.3	36.9	16.3	4.9	76	63
75	5	20	430	30	110	175	2	3 169	5	6 152	6	7 149	6	6 73	66	64	3.1	29.2	12.9	10.7	76	66
75	5	20	500	30	110	183	2	3 175	5	5 164	6	7 163	6	6 73	67	64	3.0	32.3	14.3	6.7	76	66
75	5	20	530	30	110	191	2	3 183	4	6 174	5	6 174	5	7 74	66	63	3.0	30.8	13.6	8.1	77	62
75	5	20	600	30	110	161	2	2 178	4	5 172	5	6 174	5	6 71	65	63	5.5	51.2	22.6	5.1	77	63
75	5	20	630	30	110	186	2	3 190	5	5 181	6	6 181	5	6 72	66	63	4.1	35.0	15.4	9.9	76	64
75	5	20	700	30	110	254	2	7 238	5	10 219	6	13 222	5	12 73	66	64	2.2	17.6	7.8	41.0	75	68
75	5	20	730	30	110	289	6	9 268	9	11 256	12	14 265	12	14 72	67	65	-0.3	27.0	11.9	1.1	72	79
75	5	20	830	30	110	289	5	8 270	8	9 260	12	12 268	12	12 72	68	66	-0.2	27.0	11.9	1.2	72	82
75	5	20	900	30	110	291	5	7 274	7	9 266	11	12 268	11	12 72	68	66	-0.2	23.1	10.2	2.2	72	82
75	5	20	930	30	110	292	4	8 276	6	9 268	10	11 270	11	12 73	68	65	0	24.1	10.6	2.2	73	76
75	5	20	1000	30	110	307	3	5 250	4	7 276	6	9 278	7	10 72	67	65	0	18.5	8.1	6.2	72	79
75	5	20	1030	30	110	310	5	8 299	6	9 290	9	13 292	6	9 72	67	65	0	23.1	10.2	2.6	72	79
75	5	20	1100	30	110	298	3	7 284	5	8 283	8	12 287	6	8 72	67	64	-0.2	15.5	6.8	10.3	72	76
75	5	20	1130	30	110	303	3	5 288	4	5 282	6	8 284	4	7 72	67	65	-0.3	20.7	9.1	3.1	72	79
75	5	20	1200	15	110	300	3	4 290	3	5 278	4	8 280	4	6 74	69	66	-0.7	19.2	8.4	2.9	73	78
75	5	20	1215	15	110	304	3	6 293	4	8 289	6	9 292	4	8 74	69	66	-0.9	17.5	7.7	3.4	73	78
75	5	20	1230	15	110	310	4	7 300	6	8 295	6	9 298	4	9 75	68	66	-1.1	15.8	7.0	4.2	74	76
75	5	20	1245	15	110	314	3	5 307	5	7 297	5	7 299	5	7 76	69	66	-1.1	16.6	7.3	3.5	75	74
75	5	20	1300	15	110	314	4	6 307	5	6 300	6	7 303	5	8 77	68	65	-1.1	17.1	7.5	3.1	76	69
75	5	20	1315	15	110	315	4	7 305	6	7 298	6	8 300	6	8 77	68	65	-1.4	19.1	8.4	1.5	76	70
75	5	20	1330	15	110	315	4	6 308	5	7 301	6	7 302	6	8 78	68	65	-1.5	19.7	8.7	1.2	77	68
75	5	20	1345	15	110	315	3	6 307	4	7 300	5	7 303	4	8 79	69	65	-1.5	14.4	6.3	4.1	78	65

TEST NBR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT	54FT	LAPSE	S	25	DIR	54
			(Z)	NBR	DIR	DIR SPD	DIR SPD	DIR SPD	DIR SPD	TT	DP	RATE	PPH	PPH	DEV	TT
						(1295)	(394)	(492)								
75	5	20	1400	15	110	322	3	6	322	4	7	316	5	7	320	5
75	5	20	1417	15	110	321	4	5	317	5	6	308	7	8	310	6
75	5	20	1430	15	110	315	3	6	311	4	7	303	5	7	306	5
75	5	20	1445	15	110	304	3	5	294	3	6	298	3	6	298	3
75	5	20	1500	15	110	292	3	5	297	3	5	296	4	5	302	3
75	5	20	1515	15	110	318	4	7	312	5	7	306	5	7	310	5
75	5	20	1530	15	110	329	3	6	324	4	8	311	5	9	313	4
75	5	20	1545	15	110	343	3	7	338	6	10	332	7	11	337	7
75	5	20	1600	15	110	336	4	8	332	7	10	327	8	10	332	7
75	5	20	1615	15	110	340	0	8	337	7	11	333	8	11	340	8
75	5	20	1630	15	110	337	4	9	338	8	11	330	9	12	337	9
75	5	20	1645	15	110	339	3	9	342	7	12	334	9	12	341	9
75	5	20	1700	15	110	7	4	9	359	8	12	353	9	14	359	9
75	5	20	1715	15	110	999	4	9	353	9	12	348	10	12	357	10
75	5	20	1730	15	110	3	5	9	355	9	15	352	9	13	359	9
75	5	20	1800	30	110	10	4	11	358	8	14	351	9	14	358	9
75	5	20	1830	30	110	22	6	11	999	9	9	999	9	9	999	9
75	5	20	1841	30	110	20	5	12	5	9	10	999	9	12	999	9
75	5	20	1900	30	110	17	6	11	9	10	14	8	10	16	13	11
75	5	20	1930	30	110	26	7	12	16	10	15	12	11	14	18	11
75	5	20	2000	30	110	29	7	12	20	9	14	14	10	13	20	10
75	5	20	2030	30	110	23	6	11	15	8	15	8	9	13	14	10
75	5	20	2100	30	110	21	5	10	8	9	14	4	10	14	11	10
75	5	20	2130	30	110	26	6	11	16	9	12	11	10	13	16	11

TEST 000000
WIND SYSTEM TO-EM DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INI	148	12 FT	54 FT	162 FT	234 FT	6 FT	6 FT	54 FT	LAPSE	PPH	25	DIR	54 FT
				(Z)	DIR	SPD	DIR	SPD	DIR	SPD	TT	DP	RATE		PPH	DEV	TT
						(295)		(394)		(493)							
75	5	20	330	30	303	999	99	99	99	99	99	99	11.7	81.5	34.0	0	79
75	5	20	400	30	303	999	99	99	99	99	99	99	13.1	81.5	36.0	0	79
75	5	20	430	30	303	999	99	99	99	99	99	99	13.8	81.5	34.0	0	79
75	5	20	500	30	303	999	99	99	99	99	99	99	14.6	81.5	36.0	0	79
75	5	20	530	30	303	999	99	99	99	99	99	99	14.9	81.5	34.0	0	79
75	5	20	600	30	303	999	99	99	99	99	99	99	15.0	81.5	36.0	0	79
75	5	20	630	30	303	999	99	99	99	99	99	99	15.0	81.5	34.0	0	79
75	5	20	700	30	303	999	99	99	99	99	99	99	14.9	81.5	36.0	0	79
75	5	20	730	30	303	999	99	99	99	99	99	99	8.3	99.5	99.5	99.5	75
75	5	20	800	30	303	999	99	99	99	99	99	99	4.3	42.6	14.6	4.2	73
75	5	20	900	30	303	999	99	99	99	99	99	99	4.6	45.1	19.4	5.0	74
75	5	20	930	30	303	999	99	99	99	99	99	99	7.2	81.5	36.0	0	74
75	5	20	1000	30	303	999	99	99	99	99	99	99	9.3	81.5	36.0	0	74
75	5	20	1030	30	303	999	99	99	99	99	99	99	10.0	53.4	23.5	5.7	74
75	5	20	1100	30	303	999	99	99	99	99	99	99	7.7	65.2	26.6	2.6	73
75	5	20	1130	30	303	999	99	99	99	99	99	99	5.3	38.1	16.0	14.3	73
75	5	20	1200	15	303	306	1	97	307	4	6	999	1.6	24.1	14.0	7.9	75
75	5	20	1215	15	303	300	2	99	307	5	8	999	.8	22.7	9.4	4.6	76
75	5	20	1230	15	303	296	3	99	303	5	8	999	-0.1	18.7	2.3	5.4	76
75	5	20	1245	15	303	306	2	99	305	6	8	999	-0.9	14.3	6.3	7.5	77
75	5	20	1300	15	303	304	2	99	301	5	8	999	-1.5	14.5	6.4	3.9	78
75	5	20	1315	15	303	307	2	99	310	5	8	999	-1.8	13.0	5.7	4.4	78
75	5	20	1330	15	303	294	3	99	299	5	8	999	-1.9	9.7	4.3	12.6	78
75	5	20	1345	15	303	302	3	99	307	6	9	999	-2.2	9.0	4.0	12.0	79

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TEST NBR 00900
MIMO SYSTEM TOWER DATA
CAPE CAVALIER AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT 54FT	LAPSE	5	25	DIR	54 FT
(Z)					NBR	DIR SPD	DIR SPD	DIR SPD	DIR SPD	TT DP DP	RATE	PPH	PPH	DEV	TT RM
75	5	20	330	30	308	153	2 99 165	6 7 999	99 999	99 999 999	6.0	43.3	19.1	12.8	78 99
75	5	20	400	30	302	154	2 99 160	5 6 999	99 999	99 999 999	6.4	59.3	26.1	3.8	77 99
75	5	20	430	30	308	164	2 99 165	5 6 999	99 999	99 999 999	5.8	41.2	18.2	13.9	72 99
75	5	20	500	30	308	213	2 99 184	5 6 999	99 999	99 999 999	9.2	45.0	19.4	11.0	77 99
75	5	20	530	30	308	241	2 99 195	5 6 999	99 999	99 999 999	10.8	51.0	22.5	6.8	78 99
75	5	20	600	30	308	252	2 99 195	4 5 999	99 999	99 999 999	9.8	72.9	32.1	1.7	77 99
75	5	20	630	30	308	256	2 99 222	4 5 999	99 999	99 999 999	11.1	81.5	36.0	1.0	76 99
75	5	20	700	30	308	271	4 99 265	7 10 999	99 999	99 999 999	8.4	53.1	23.4	5.8	73 99
75	5	20	730	30	308	270	4 99 279	8 9 999	99 999	99 999 999	4.2	50.2	22.1	2.6	70 99
75	5	20	830	30	308	268	3 99 276	7 8 999	99 999	99 999 999	3.8	40.9	18.0	4.5	71 99
75	5	20	900	30	308	273	3 99 281	8 9 999	99 999	99 999 999	4.5	56.3	24.8	2.0	72 99
75	5	20	930	30	308	271	3 99 283	7 7 999	99 999	99 999 999	4.9	50.6	22.3	3.8	72 99
75	5	20	1000	30	308	267	2 99 228	5 7 999	99 999	99 999 999	5.7	47.7	21.0	7.5	72 99
75	5	20	1030	30	308	298	2 99 307	6 7 999	99 999	99 999 999	5.2	40.1	17.7	11.1	71 99
75	5	20	1100	30	308	261	2 99 294	5 7 999	99 999	99 999 999	5.5	35.9	15.8	20.1	71 99
75	5	20	1130	30	308	255	2 99 294	4 5 999	99 999	99 999 999	5.4	35.7	15.7	19.6	71 99
75	5	20	1200	15	308	282	2 99 304	4 4 999	99 999	99 999 999	1.8	19.2	8.5	22.1	73 99
75	5	20	1215	15	308	294	2 99 310	3 5 999	99 999	99 999 999	.4	19.2	8.5	7.5	73 99
75	5	20	1230	15	308	301	3 99 312	5 7 999	99 999	99 999 999	.1	19.5	8.8	5.1	74 99
75	5	20	1245	15	308	304	3 99 315	5 8 999	99 999	99 999 999	0	19.9	8.8	4.7	76 99
75	5	20	1300	15	308	304	4 99 313	5 8 999	99 999	99 999 999	-0.2	16.3	7.2	8.4	77 99
75	5	20	1315	15	308	309	4 99 317	6 9 999	99 999	99 999 999	-0.5	15.0	6.6	9.0	78 99
75	5	20	1330	15	308	305	4 99 318	6 9 999	99 999	99 999 999	-0.6	14.5	6.4	9.3	78 99
75	5	20	1345	15	308	290	4 99 299	5 8 999	99 999	99 999 999	-0.6	13.3	5.9	12.9	79 99

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YR	MON	DAY	TIME	12 FT	54 FT	162 FT	204 FT	6FT 6FT	54FT	LAPSE	5	25	DIR	54 FT		
(Z)				INT	1WR	1BR	DIR	SPD	GST	DIR	SPD	GST	DIR	SPD	TT	MM
75	5	20	1400	15	308	313	4	99	323	5	9	999	99	99	999	99
75	5	20	1417	15	308	300	4	99	313	6	7	999	99	99	999	99
75	5	20	1430	15	303	284	5	99	295	6	8	999	99	99	999	99
75	5	20	1445	15	308	290	4	99	303	5	9	999	99	99	999	99
75	5	20	1500	15	308	289	3	99	301	4	7	999	99	99	999	99
75	5	20	1515	15	308	325	4	99	331	5	3	999	99	99	999	99
75	5	20	1530	15	308	310	5	99	313	4	12	999	99	99	999	99
75	5	20	1545	15	308	319	4	99	325	5	10	999	99	99	999	99
75	5	20	1600	15	308	328	5	99	333	7	12	999	99	99	999	99
75	5	20	1615	15	308	355	6	99	340	8	15	999	99	99	999	99
75	5	20	1630	15	308	6	7	99	347	9	14	999	99	99	999	99
75	5	20	1645	15	308	343	7	99	357	9	15	999	99	99	999	99
75	5	20	1700	15	308	14	8	99	360	11	19	999	99	99	999	99
75	5	20	1715	15	308	22	9	99	367	12	18	999	99	99	999	99
75	5	20	1730	15	308	22	9	99	373	99	99	999	99	99	999	99
75	5	20	1800	30	308	18	8	99	389	24	16	999	99	99	999	99
75	5	20	1830	30	308	17	9	99	397	43	17	999	99	99	999	99
75	5	20	1841	30	308	21	9	99	398	59	14	999	99	99	999	99
75	5	20	1900	30	308	26	9	99	393	12	15	999	99	99	999	99
75	5	20	1930	30	308	23	9	99	390	11	17	999	99	99	999	99
75	5	20	2000	30	308	25	8	99	395	11	15	999	99	99	999	99
75	5	20	2030	30	308	29	7	99	396	3	14	999	99	99	999	99
75	5	20	2100	30	308	20	8	99	395	99	14	999	99	99	999	99
75	5	20	2130	30	304	22	8	99	399	51	16	999	99	99	999	99

TEST '45 00030
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MO	DAY	TIME	INT	INR	12 FT	54 FT	162 FT	204 FT	6FT 6FT 54FT	LAPSE	S	25	DIR	54 FT
						DIR SPD	DIR SPD	DIR SPD	DIR SPD	IT DP UP	RATE	PPM	PPM	DEV	IT RM
						(295)	(394)	(394)	(1.7)						
75	5	20	330	30	311	159	4	99 163	9 999	99 999	6.8	51.8	22.4	6.4	78
75	5	20	400	30	311	157	4	99 153	9 999	99 999	7.1	54.9	24.2	5.1	77
75	5	20	430	30	311	171	4	99 169	9 999	99 999	7.3	66.7	29.4	2.4	77
75	5	20	500	30	311	187	4	99 184	9 999	99 999	6.4	50.1	22.1	7.3	76
75	5	20	530	30	311	194	4	99 192	9 999	99 999	6.3	53.6	23.5	5.6	76
75	5	20	600	30	311	216	3	99 201	9 999	99 999	4.5	31.6	15.2	13.2	77
75	5	20	630	30	311	249	3	99 234	9 999	99 999	2.9	35.0	15.4	4.6	76
75	5	20	700	30	311	252	4	99 255	9 999	99 999	2.5	30.0	13.2	6.4	74
75	5	20	730	30	311	263	4	99 269	9 999	99 999	1.4	33.5	14.8	1.9	72
75	5	20	830	30	311	268	4	99 272	9 999	99 999	2.0	35.3	15.6	2.4	73
75	5	20	900	30	311	270	4	99 270	9 999	99 999	1.7	40.6	19.0	.8	73
75	5	20	930	30	311	270	4	99 271	9 999	99 999	1.8	41.6	18.3	1.0	72
75	5	20	1000	30	311	289	3	99 294	9 999	99 999	1.6	21.1	9.3	13.2	72
75	5	20	1030	30	311	297	2	99 304	9 999	99 999	1.6	29.7	13.1	3.5	72
75	5	20	1100	20	311	263	3	99 281	9 999	99 999	1.6	19.9	8.4	16.5	72
75	5	20	1130	30	311	241	3	99 260	9 999	99 999	1.4	19.5	8.8	15.4	71
75	5	20	1200	15	311	264	4	99 274	9 999	99 999	.6	17.8	7.4	11.9	73
75	5	20	1215	15	311	294	3	99 303	9 999	99 999	.2	14.9	.6	16.9	73
75	5	20	1230	15	311	303	3	99 311	9 999	99 999	0	17.7	7.7	7.4	74
75	5	20	1245	15	311	304	4	99 314	9 999	99 999	-0.1	19.7	8.7	4.4	75
75	5	20	1300	15	311	303	3	99 312	9 999	99 999	-0.2	18.6	8.2	5.1	76
75	5	20	1315	15	311	311	2	99 319	9 999	99 999	-0.5	15.7	6.4	7.5	77
75	5	20	1330	15	311	314	4	99 325	9 999	99 999	-0.4	16.7	7.4	6.5	78
75	5	20	1345	15	311	310	4	99 314	9 999	99 999	-0.5	1.1	7.1	6.8	79

TEST NBR 00020
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT	LAPSE	5	25	DIR	54 FT
(Z)						DIR SPD	DIR SPD	DIR SPD	DIR SPD	TT DP	RATE	PPM	PPM	DEV	TT RH
						(295)	(394)	(394)	(432)	TT DP					
75	5	20	1400	15	311	307	3	99	99	99	-0.4	16.4	7.2	7.0	80
75	5	20	1417	15	311	298	3	99	99	99	-0.8	14.0	6.5	7.2	80
75	5	20	1430	15	311	280	3	99	99	99	-0.6	13.7	6.0	11.6	80
75	5	20	1445	15	311	282	3	99	99	99	-0.7	15.0	6.6	7.4	81
75	5	20	1500	15	311	294	3	99	99	99	-0.4	15.9	7.0	7.8	82
75	5	20	1515	15	311	291	3	99	99	99	-0.5	14.9	6.7	9.2	83
75	5	20	1530	15	311	320	4	99	99	99	-0.6	11.8	5.2	20.6	83
75	5	20	1545	15	311	328	6	99	99	99	-0.7	14.0	6.2	9.7	83
75	5	20	1600	15	311	333	6	99	99	99	-0.9	15.5	6.6	5.5	83
75	5	20	1615	15	311	336	7	99	99	99	-0.7	19.0	3.4	3.0	83
75	5	20	1630	15	311	349	6	99	99	99	-0.7	15.2	6.7	7.1	83
75	5	20	1645	15	311	351	7	99	99	99	-0.8	14.7	6.5	7.3	84
75	5	20	1700	15	311	337	7	99	99	99	-1.0	12.9	5.7	10.0	84
75	5	20	1715	15	311	353	7	99	99	99	-0.8	13.8	6.1	9.5	84
75	5	20	1730	15	311	350	7	99	99	99	-0.8	13.8	6.1	9.3	84
75	5	20	1800	30	311	1	7	99	99	99	-1.0	15.2	6.7	5.4	84
75	5	20	1820	30	311	14	8	99	99	99	-1.3	12.0	5.3	10.1	82
75	5	20	1841	30	311	16	7	99	99	99	-1.3	12.1	5.3	9.6	82
75	5	20	1900	30	311	23	8	99	99	99	-1.3	14.5	6.4	4.8	82
75	5	20	1930	30	311	21	8	99	99	99	-1.1	14.1	6.2	6.5	81
75	5	20	2000	30	311	23	8	99	99	99	-1.0	17.7	7.6	3.0	81
75	5	20	2030	30	311	26	7	99	99	99	-0.9	15.5	6.8	5.5	81
75	5	20	2100	30	311	12	8	99	99	99	-0.8	16.3	7.2	4.9	80
75	5	20	2130	30	311	22	8	99	99	99	-0.5	15.2	6.7	8.6	81

TEST NGR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6 FT	6 FT	54 FT	LAPSE	5	25	DIR	54 FT
(Z)						NR	DIR	SPD	GST	DIR	SPD	GST	DIR	PPH	PPH	DEV	TT
75	5	20	330	30	313	176	1	163	6	7	155	8	9	147	7	8	157
75	5	20	400	30	313	176	1	176	8	7	158	8	9	152	9	9	152
75	5	20	430	30	313	176	1	179	8	9	150	7	8	158	7	8	158
75	5	20	500	30	313	189	1	182	9	9	155	8	8	162	7	8	162
75	5	20	530	30	313	228	1	189	8	9	161	7	8	165	8	9	165
75	5	20	600	30	313	228	1	201	5	6	182	7	7	176	7	8	176
75	5	20	630	30	313	245	1	205	4	5	181	6	6	176	6	7	176
75	5	20	700	30	313	261	2	216	7	8	187	6	7	191	7	7	191
75	5	20	730	30	313	270	2	221	5	6	198	7	7	194	6	6	194
75	5	20	800	30	313	270	1	225	6	9	202	11	12	208	10	11	208
75	5	20	830	30	313	270	1	227	7	8	207	11	12	209	10	11	209
75	5	20	900	30	313	270	1	229	9	15	249	10	12	254	9	11	254
75	5	20	930	30	313	274	2	236	7	8	267	11	12	259	10	11	259
75	5	20	1000	30	313	294	1	242	15	15	255	12	14	262	9	11	262
75	5	20	1030	30	313	285	2	243	15	16	272	14	16	274	12	15	274
75	5	20	1100	30	313	271	2	246	16	17	279	15	16	281	14	15	281
75	5	20	1130	30	313	251	1	249	14	16	288	10	11	284	12	13	284
75	5	20	1200	15	313	273	1	251	13	16	281	14	16	285	13	15	285
75	5	20	1215	15	313	281	1	254	4	6	290	7	9	287	9	11	287
75	5	20	1230	15	313	303	3	257	12	13	287	13	14	287	13	15	287
75	5	20	1245	15	313	305	3	259	10	13	292	12	13	294	14	16	294
75	5	20	1300	15	313	308	4	261	8	11	297	9	12	304	11	14	304
75	5	20	1315	15	313	303	3	263	7	11	302	8	11	297	9	11	297
75	5	20	1330	15	313	281	2	265	5	9	302	6	8	297	6	10	297
75	5	20	1345	15	313	312	3	267	7	10	301	7	10	312	8	12	312
75	5	20						269	5	8	290	6	8	289	6	9	289
75	5	20						309	6	8	294	5	8	303	5	9	303
75	5	20						313	6	8	304	7	9	300	7	10	300
75	5	20						320	7	10	298	6	9	304	6	10	304

TEST NBR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6 FT 6 FT 54 FT	LAPSE	5	25	DIR	54 FT		
(Z)						NBR	DIR	SPD	GST	DIR	SPD	GST	DIR	PPM	DEV	TT	MM
75	5	20	1400	15	313	304	4	7	302	6	10	297	7	10	294	7	11
75	5	20	1417	15	313	288	4	6	290	7	8	287	8	9	285	8	9
75	5	20	1430	15	313	293	3	7	292	5	9	293	6	10	288	7	9
75	5	20	1445	15	313	289	2	6	295	5	9	291	6	9	289	6	9
75	5	20	1500	15	313	296	3	7	299	5	10	299	6	9	295	6	11
75	5	20	1515	15	313	337	4	7	336	6	13	337	8	12	335	8	12
75	5	20	1530	15	313	333	4	8	330	8	12	324	9	12	320	9	13
75	5	20	1545	15	313	326	5	9	327	8	12	323	9	13	318	10	13
75	5	20	1600	15	313	339	5	10	339	9	12	336	9	13	332	9	13
75	5	20	1615	15	313	335	6	10	341	10	14	338	11	14	335	11	14
75	5	20	1630	15	313	351	6	10	351	9	14	344	10	14	340	11	14
75	5	20	1645	15	313	358	5	9	358	8	13	354	9	12	348	10	14
75	5	20	1700	15	313	999	6	10	356	10	13	349	11	14	346	12	15
75	5	20	1715	15	313	345	9	39	344	13	42	352	10	13	342	13	41
75	5	20	1730	15	313	999	6	12	358	9	15	354	10	14	352	11	15
75	5	20	1800	30	313	12	6	11	9	10	15	3	10	14	999	11	16
75	5	20	1830	30	313	16	7	11	14	11	15	8	12	15	6	13	17
75	5	20	1841	30	313	17	6	10	17	11	14	13	11	14	9	12	17
75	5	20	1900	30	313	19	7	12	18	10	15	16	11	14	14	12	15
75	5	20	1930	30	313	26	6	12	27	10	15	21	11	15	19	12	16
75	5	20	2000	30	313	32	6	11	33	9	13	27	10	13	25	11	15
75	5	20	2030	30	313	29	6	11	27	9	14	20	10	16	44	10	15
75	5	20	2100	30	313	22	6	11	22	10	15	16	11	14	14	12	15
75	5	20	2130	30	313	29	6	11	31	10	15	23	11	14	22	12	15

TEST NBR 0000G
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MO	DAY	TIME	INI	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT	LAPSE	5	25	DIR	54 FT
				(Z)	NBR	DIR	SPD	GST	DIR	SPD	GST	DIR	PPM	PPM	DEV
				(295)											TT
				(394)											DP
				(492)											DP
															TT
															MM
75	5	20	330	30	403	999	99	99	140	4	5	999	99	999	99
75	5	20	400	30	403	162	1	99	129	5	6	999	99	999	99
75	5	20	430	30	403	999	99	99	134	5	6	999	99	999	99
75	5	20	500	30	403	999	99	99	153	5	5	999	99	999	99
75	5	20	530	30	403	999	99	99	172	4	5	999	99	999	99
75	5	20	600	30	403	180	1	99	176	5	6	999	99	999	99
75	5	20	630	30	403	999	99	99	186	5	6	999	99	999	99
75	5	20	700	30	403	210	1	99	195	5	6	999	99	999	99
75	5	20	730	30	403	275	4	99	257	6	10	999	99	999	99
75	5	20	800	30	403	279	5	99	264	7	9	999	99	999	99
75	5	20	900	30	403	288	4	99	270	6	10	999	99	999	99
75	5	20	930	30	403	292	3	99	278	6	8	999	99	999	99
75	5	20	1000	30	403	290	3	99	274	5	8	999	99	999	99
75	5	20	1030	30	403	294	3	99	277	6	10	999	99	999	99
75	5	20	1100	30	403	304	4	99	289	6	9	999	99	999	99
75	5	20	1130	30	403	306	4	99	292	7	9	999	99	999	99
75	5	20	1200	15	403	310	4	99	291	6	9	999	99	999	99
75	5	20	1215	15	403	308	4	99	296	6	8	999	99	999	99
75	5	20	1230	15	403	306	4	99	292	5	8	999	99	999	99
75	5	20	1245	15	403	310	4	99	294	6	7	999	99	999	99
75	5	20	1300	15	403	308	4	99	290	6	7	999	99	999	99
75	5	20	1315	15	403	308	4	99	294	6	7	999	99	999	99
75	5	20	1330	15	403	307	4	99	292	5	7	999	99	999	99
75	5	20	1345	15	403	307	3	99	293	5	7	999	99	999	99

WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6FT	6FT	54FT	LAPSE	5	25	DIR	54 FT
			(Z)	NBR	DIR	SPD	DIR	SPD	DIR	SPD	DP	DP	RATE	PPM	PPM	DEV	TT
						(295)	(394)	(394)	(492)								RM
75	5	20	1400	15	403	311	3	99	298	5	7	999	99	99	999	99	99
75	5	20	1417	15	403	324	3	99	307	4	5	999	99	99	999	99	99
75	5	20	1430	15	403	317	3	99	307	4	6	999	99	99	999	99	99
75	5	20	1445	15	403	335	3	99	323	4	5	999	99	99	999	99	99
75	5	20	1500	15	403	310	2	99	307	3	6	999	99	99	999	99	99
75	5	20	1515	15	403	327	2	99	311	3	6	999	99	99	999	99	99
75	5	20	1530	15	403	307	3	99	290	4	7	999	99	99	999	99	99
75	5	20	1545	15	403	311	3	99	292	3	6	999	99	99	999	99	99
75	5	20	1600	15	403	295	3	99	287	4	7	999	99	99	999	99	99
75	5	20	1615	15	403	327	3	99	317	4	7	999	99	99	999	99	99
75	5	20	1630	15	403	4	4	99	355	5	8	999	99	99	999	99	99
75	5	20	1645	15	403	10	5	99	3	5	11	999	99	99	999	99	99
75	5	20	1700	15	403	359	6	99	355	6	11	999	99	99	999	99	99
75	5	20	1715	15	403	13	7	99	2	8	12	999	99	99	999	99	99
75	5	20	1730	15	403	9	7	99	999	8	13	999	99	99	999	99	99
75	5	20	1800	30	403	6	6	99	357	7	13	999	99	99	999	99	99
75	5	20	1830	30	403	6	7	99	356	9	15	999	99	99	999	99	99
75	5	20	1841	30	403	5	7	99	356	8	15	999	99	99	999	99	99
75	5	20	1900	30	403	3	7	99	999	6	14	999	99	99	999	99	99
75	5	20	1930	30	403	24	8	99	21	9	14	999	99	99	999	99	99
75	5	20	2000	30	403	30	8	99	28	9	12	999	99	99	999	99	99
75	5	20	2030	30	403	36	8	99	32	9	13	999	99	99	999	99	99
75	5	20	2100	30	403	35	8	99	32	9	11	999	99	99	999	99	99
75	5	20	2130	30	403	34	8	99	32	9	13	999	99	99	999	99	99

TEST NBR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INI	TWR	12 FT	54 FT	162 FT	204 FT	6 FT	6 FT	6 FT	5	25	DIR	54 FT
						NBR	DIR	DIR	DIR	DIR	DIR	DIR	PPM	PPM	DEV	TT
						SPD	SPD	SPD	SPD	SPD	SPD	SPD				TT
						(295)	(394)	(492)								
75	5	20	330	30	412	174	3	99	151	5	6	999	99	999	99	99
75	5	20	400	30	412	183	2	99	153	5	5	999	99	999	99	99
75	5	20	430	30	412	189	2	99	160	5	6	999	99	999	99	99
75	5	20	500	30	412	210	2	99	173	5	5	999	99	999	99	99
75	5	20	530	30	412	187	1	99	189	5	6	999	99	999	99	99
75	5	20	600	30	412	187	2	99	193	4	5	999	99	999	99	99
75	5	20	630	30	412	267	1	99	218	5	7	999	99	999	99	99
75	5	20	700	30	412	255	4	99	255	7	10	999	99	999	99	99
75	5	20	730	30	412	262	3	99	260	7	9	999	99	999	99	99
75	5	20	830	30	412	258	4	99	263	7	8	999	99	999	99	99
75	5	20	900	30	412	270	3	99	270	6	7	999	99	999	99	99
75	5	20	930	30	412	270	3	99	277	6	7	999	99	999	99	99
75	5	20	1000	30	412	282	3	99	293	6	8	999	99	999	99	99
75	5	20	1030	30	412	283	2	99	295	5	8	999	99	999	99	99
75	5	20	1100	30	412	253	2	99	283	5	6	999	99	999	99	99
75	5	20	1130	30	412	253	2	99	269	5	7	999	99	999	99	99
75	5	20	1200	15	412	272	3	99	276	5	7	999	99	999	99	99
75	5	20	1215	15	412	291	3	99	296	5	7	999	99	999	99	99
75	5	20	1230	15	412	300	3	99	303	5	8	999	99	999	99	99
75	5	20	1245	15	412	301	4	99	302	5	9	999	99	999	99	99
75	5	20	1300	15	412	301	4	99	306	6	10	999	99	999	99	99
75	5	20	1315	15	412	318	4	99	318	7	10	999	99	999	99	99
75	5	20	1330	15	412	295	4	99	300	6	8	999	99	999	99	99
75	5	20	1305	15	412	282	4	99	290	5	9	999	99	999	99	99

WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT	54FT	LAPSE	5	25	DIR	54 FT
(Z)						DIR SPD	DIR SPD	DIR SPD	DIR SPD	TT	DP	RATE	PPM	PPM	DEV	TT
						(295)	(394)	(492)								
75	5	20	1400	15	412	304	4	99	306	7	99	99	99	99	99	99
75	5	20	1417	15	412	283	5	99	287	6	99	99	99	99	99	99
75	5	20	1430	15	412	270	4	99	274	6	99	99	99	99	99	99
75	5	20	1445	15	412	263	4	99	271	6	99	99	99	99	99	99
75	5	20	1500	15	412	274	4	99	279	5	99	99	99	99	99	99
75	5	20	1515	15	412	289	3	99	297	5	99	99	99	99	99	99
75	5	20	1530	15	412	319	4	99	320	6	99	99	99	99	99	99
75	5	20	1545	15	412	344	5	99	338	8	99	99	99	99	99	99
75	5	20	1600	15	412	337	5	99	332	9	99	99	99	99	99	99
75	5	20	1615	15	412	332	5	99	334	8	99	99	99	99	99	99
75	5	20	1630	15	412	358	7	99	356	10	99	99	99	99	99	99
75	5	20	1645	15	412	350	7	99	346	11	99	99	99	99	99	99
75	5	20	1700	15	412	356	7	99	356	10	99	99	99	99	99	99
75	5	20	1715	15	412	16	9	99	11	11	99	99	99	99	99	99
75	5	20	1730	15	412	10	8	99	4	11	99	99	99	99	99	99
75	5	20	1800	30	412	999	8	99	358	10	99	99	99	99	99	99
75	5	20	1830	30	412	20	9	99	20	11	99	99	99	99	99	99
75	5	20	1841	30	412	19	8	99	22	11	99	99	99	99	99	99
75	5	20	1900	30	412	21	8	99	21	11	99	99	99	99	99	99
75	5	20	1930	30	412	27	8	99	29	10	99	99	99	99	99	99
75	5	20	2000	30	412	29	8	99	29	11	99	99	99	99	99	99
75	5	20	2030	30	412	33	7	99	34	10	99	99	99	99	99	99
75	5	20	2100	30	412	22	8	99	22	10	99	99	99	99	99	99
75	5	20	2130	30	412	33	8	99	32	10	99	99	99	99	99	99

TEST NBR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6FT 54FT	LAPSE	5	25	DIR	54 FT
(Z)						NBR	DIR SPD	DIR SPD	DIR SPD	TT	DP	OP	RATE	PPM	DEV
							(295)	(394)	(492)						
75	5	20	330	30	509	119	1 99 151	5 6 999	99 999	99 999	4.0	28.7	12.7	20.1	75 99
75	5	20	400	30	509	999	99 99 999	99 999	99 999	99 999	4.2	28.5	12.6	23.3	74 99
75	5	20	430	30	509	999	99 99 999	99 999	99 999	99 999	4.2	24.0	10.6	45.5	73 99
75	5	20	500	30	509	999	99 99 999	99 999	99 999	99 999	4.3	20.7	9.1	85.4	73 99
75	5	20	530	30	509	999	99 99 999	99 999	99 999	99 999	6.2	99.*	99.*	99.*	74 99
75	5	20	600	30	509	999	99 99 999	99 999	99 999	99 999	6.2	31.2	13.7	45.9	74 99
75	5	20	630	30	509	248	1 99 216	5 7 999	99 999	99 999	5.2	34.9	15.4	19.0	73 99
75	5	20	700	30	509	258	1 99 250	7 9 999	99 999	99 999	3.7	34.6	15.2	8.1	72 99
75	5	20	730	30	509	259	1 99 253	6 7 999	99 999	99 999	1.8	22.7	10.0	11.6	72 99
75	5	20	830	30	509	242	1 99 251	6 7 999	99 999	99 999	2.5	33.1	14.6	4.4	72 99
75	5	20	900	30	509	999	99 99 999	99 999	99 999	99 999	3.2	99.*	99.*	99.*	71 99
75	5	20	930	30	509	270	1 99 265	5 6 999	99 999	99 999	3.6	21.9	9.7	44.6	72 99
75	5	20	1000	30	509	279	1 99 275	5 7 999	99 999	99 999	2.9	26.1	11.5	14.4	72 99
75	5	20	1030	30	509	999	99 99 999	99 999	99 999	99 999	2.2	21.2	9.3	20.0	71 99
75	5	20	1100	30	509	999	99 99 999	99 999	99 999	99 999	2.4	15.2	6.7	83.4	70 99
75	5	20	1130	30	509	999	99 99 999	99 999	99 999	99 999	2.4	18.0	7.9	43.5	70 99
75	5	20	1200	15	509	999	99 99 999	99 999	99 999	99 999	-0.4	12.3	5.4	20.9	72 99
75	5	20	1215	15	509	319	1 99 304	2 5 999	99 999	99 999	-1.2	8.8	3.9	36.6	73 99
75	5	20	1230	15	509	305	2 99 294	4 6 999	99 999	99 999	-1.3	9.7	4.3	22.9	75 99
75	5	20	1245	15	509	308	2 99 299	4 7 999	99 999	99 999	-1.7	14.5	6.4	3.2	75 99
75	5	20	1300	15	509	308	2 99 296	4 7 999	99 999	99 999	-2.2	11.2	4.9	5.2	76 99
75	5	20	1315	15	509	323	3 99 311	5 10 999	99 999	99 999	-2.5	8.5	3.8	10.6	77 99
75	5	20	1330	15	509	326	3 99 312	6 9 999	99 999	99 999	-2.5	8.7	3.9	9.6	78 99
75	5	20	1345	15	509	304	2 99 299	5 7 999	99 999	99 999	-2.9	7.2	3.2	12.8	78 99

TEST NBR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INI	TWR	12 FT	54 FT	162 FT	204 FT	6FT 54FT	LAPSE	5	25	DIR	54 FT		
			(Z)	NBR	DIR	SPD	GST	DIR	SPD	GST	TT	DP	PPM	PPM	DEV	IT	RM
						(295)		(394)	(492)		RATE						
75	5	20	1400	15	509	303	2	99	289	5	9	999	99	99	999	99	99
75	5	20	1417	15	509	309	3	99	302	6	8	999	99	99	999	99	99
75	5	20	1430	15	509	275	2	99	278	5	10	999	99	99	999	99	99
75	5	20	1445	15	509	276	2	99	270	5	9	999	99	99	999	99	99
75	5	20	1500	15	509	278	3	99	270	6	9	999	99	99	999	99	99
75	5	20	1515	15	509	273	2	99	266	5	7	999	99	99	999	99	99
75	5	20	1530	15	509	252	3	99	253	6	10	999	99	99	999	99	99
75	5	20	1545	15	509	300	2	99	296	5	11	999	99	99	999	99	99
75	5	20	1600	15	509	342	4	99	329	6	11	999	99	99	999	99	99
75	5	20	1615	15	509	333	4	99	326	7	11	999	99	99	999	99	99
75	5	20	1630	15	509	357	5	99	350	7	12	999	99	99	999	99	99
75	5	20	1645	15	509	599	6	99	356	9	16	999	99	99	999	99	99
75	5	20	1700	15	509	356	6	99	347	9	15	999	99	99	999	99	99
75	5	20	1715	15	509	12	7	99	999	4	10	15	999	99	99	999	99
75	5	20	1730	15	509	5	6	99	357	8	14	999	99	99	999	99	99
75	5	20	1800	30	509	4	7	99	358	10	16	999	99	99	999	99	99
75	5	20	1830	30	509	3	6	99	358	10	16	999	99	99	999	99	99
75	5	20	1841	30	509	11	6	99	6	9	9	16	999	99	99	999	99
75	5	20	1900	30	509	20	6	99	18	9	15	999	99	99	999	99	99
75	5	20	1930	30	509	19	6	99	16	9	9	16	999	99	99	999	99
75	5	20	2000	30	509	26	6	99	23	9	15	999	99	99	999	99	99
75	5	20	2030	30	509	29	6	99	31	9	15	999	99	99	999	99	99
75	5	20	2100	30	509	19	6	99	15	9	16	999	99	99	999	99	99
75	5	20	2130	30	509	20	6	99	19	9	16	999	99	99	999	99	99

CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INI	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT	54FT	LAPSE	5	25	OIR	54 FT
(Z)				NBR	DIR	SPD	DIR	SPD	DIR	SPD	DP	RATE	PPM	PPM	DEV	TT
							(295)	(394)	(492)							TT
75	5	20	330	30	714	206	1	99	142	5	6	999	99	999	99	73
																999
																999
75	5	20	400	30	714	191	1	99	140	6	6	999	99	999	99	71
																999
																999
75	5	20	430	30	714	194	1	99	147	6	7	999	99	999	99	71
																999
																999
75	5	20	500	30	714	230	1	99	154	5	7	999	99	999	99	71
																999
																999
75	5	20	530	30	714	255	1	99	167	4	6	999	99	999	99	70
																999
																999
75	5	20	600	30	714	999	99	99	162	4	4	999	99	999	99	69
																999
																999
75	5	20	630	30	714	258	3	99	228	6	12	999	99	999	99	70
																999
																999
75	5	20	700	30	714	263	4	99	239	8	11	999	99	999	99	72
																999
																999
75	5	20	730	30	714	257	4	99	241	8	12	999	99	999	99	72
																999
																999
75	5	20	830	30	714	253	2	99	247	6	9	999	99	999	99	72
																999
																999
75	5	20	900	30	714	264	3	99	251	7	11	999	99	999	99	72
																999
																999
75	5	20	930	30	714	272	3	99	263	6	8	999	99	999	99	72
																999
																999
75	5	20	1000	30	714	278	3	99	274	6	11	999	99	999	99	72
																999
																999
75	5	20	1030	30	714	271	3	99	275	6	8	999	99	999	99	72
																999
																999
75	5	20	1100	30	714	272	3	99	269	6	8	999	99	999	99	72
																999
																999
75	5	20	1130	30	714	266	3	99	264	6	10	999	99	999	99	73
																999
																999
75	5	20	1200	15	714	268	3	99	268	6	7	999	99	999	99	75
																999
																999
75	5	20	1215	15	714	268	3	99	270	5	8	999	99	999	99	75
																999
																999
75	5	20	1230	15	714	294	3	99	206	6	11	999	99	999	99	76
																999
																999
75	5	20	1245	15	714	293	4	99	289	8	13	999	99	999	99	76
																999
																999
75	5	20	1300	15	714	314	4	99	304	8	12	999	99	999	99	77
																999
																999
75	5	20	1315	15	714	313	5	99	307	8	12	999	99	999	99	78
																999
																999
75	5	20	1330	15	714	300	4	99	301	8	11	999	99	999	99	79
																999
																999
75	5	20	1345	15	714	298	4	99	296	8	11	999	99	999	99	79
																999
																999

TEST NBR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INI	TMR	12 FT	DIR	SPD	GST	54 FT	DIR	SPD	GST	162 FT	DIR	SPD	GST	204 FT	DIR	SPD	GST	6FT	DP	54FT	DP	LAPSE	S	25	DIR	DEV	TT	RM
			(Z)							(295)				(394)				(492)														
75	5	20	1400	15	714	292	4	99	290	6	10	999	99	99	999	99	99	999	99	99	999	99	81	999	999	-1.6	13.4	5.9	4.9	7.9	99	99
75	5	20	1417	15	714	280	4	99	277	7	11	999	99	99	999	99	99	999	99	99	999	99	82	999	999	-1.5	12.3	5.4	7.5	81	99	99
75	5	20	1430	15	714	280	4	99	272	8	14	999	99	99	999	99	99	999	99	99	999	99	82	999	999	-1.6	16.6	7.3	2.1	80	99	99
75	5	20	1445	15	714	268	5	99	249	9	13	999	99	99	999	99	99	999	99	99	999	99	83	999	999	-2.0	11.1	4.9	6.6	81	99	99
75	5	20	1500	15	714	280	4	99	277	7	11	999	99	99	999	99	99	999	99	99	999	99	84	999	999	-1.8	11.6	5.1	6.9	82	99	99
75	5	20	1515	15	714	288	4	99	285	7	11	999	99	99	999	99	99	999	99	99	999	99	85	999	999	-1.8	11.8	5.2	6.4	83	99	99
75	5	20	1530	15	714	293	5	99	294	10	17	999	99	99	999	99	99	999	99	99	999	99	86	999	999	-2.2	10.7	4.7	6.2	84	99	99
75	5	20	1545	15	714	295	5	99	291	10	16	999	99	99	999	99	99	999	99	99	999	99	86	999	999	-2.2	10.5	4.6	6.7	84	99	99
75	5	20	1600	15	714	292	4	99	294	8	15	999	99	99	999	99	99	999	99	99	999	99	86	999	999	-2.2	11.0	4.8	5.6	84	99	99
75	5	20	1615	15	714	294	5	99	297	9	16	999	99	99	999	99	99	999	99	99	999	99	87	999	999	-2.0	12.4	5.5	4.3	85	99	99
75	5	20	1630	15	714	316	5	99	334	11	16	999	99	99	999	99	99	999	99	99	999	99	87	999	999	-1.9	9.9	4.4	11.4	85	99	99
75	5	20	1645	15	714	313	5	99	319	9	15	999	99	99	999	99	99	999	99	99	999	99	88	999	999	-2.2	10.9	4.8	5.7	86	99	99
75	5	20	1700	15	714	327	6	99	333	11	23	999	99	99	999	99	99	999	99	99	999	99	88	999	999	-2.1	9.4	4.1	11.5	86	99	99
75	5	20	1715	15	714	327	7	99	336	13	22	999	99	99	999	99	99	999	99	99	999	99	88	999	999	-2.1	10.0	4.4	9.0	86	99	99
75	5	20	1730	15	714	329	8	99	342	15	24	999	99	99	999	99	99	999	99	99	999	99	88	999	999	-2.1	12.5	5.5	3.8	86	99	99
75	5	20	1800	30	714	347	6	99	356	14	24	999	99	99	999	99	99	999	99	99	999	99	88	999	999	-2.1	9.1	4.0	12.7	86	99	99
75	5	20	1830	30	714	353	3	99	21	15	23	999	99	99	999	99	99	999	99	99	999	99	88	999	999	-2.2	9.1	4.0	11.6	86	99	99
75	5	20	1841	30	714	360	4	99	23	15	22	999	99	99	999	99	99	999	99	99	999	99	87	999	999	-2.2	8.8	3.9	12.9	85	99	99
75	5	20	1900	30	714	347	3	99	19	14	24	999	99	99	999	99	99	999	99	99	999	99	87	999	999	-2.0	7.4	3.3	31.3	85	99	99
75	5	20	1930	30	714	5	3	99	27	14	21	999	99	99	999	99	99	999	99	99	999	99	86	999	999	-2.1	10.1	4.4	8.6	84	99	99
75	5	20	2000	30	714	9	3	99	33	15	22	999	99	99	999	99	99	999	99	99	999	99	86	999	999	-1.9	9.4	4.1	14.2	84	99	99
75	5	20	2030	30	714	34	5	99	37	15	22	999	99	99	999	99	99	999	99	99	999	99	85	999	999	-1.9	9.2	4.1	15.1	83	99	99
75	5	20	2100	30	714	34	4	99	34	15	21	999	99	99	999	99	99	999	99	99	999	99	85	999	999	-1.8	9.2	4.1	17.0	83	99	99
75	5	20	2130	30	714	3	2	99	34	15	21	999	99	99	999	99	99	999	99	99	999	99	84	999	999	-1.4	8.2	3.6	39.0	83	99	99

TEST 49R 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MON	DAY	TIME	INT	TWR	12 FT	54 FT	162 FT	204 FT	6FT 6FT 54FT	LAPSE	5	25	DIR	54 FT
(Z)						DIR SPD	DIR SPD	DIR SPD	DIR SPD	TT DP DP	RATE	PPM	PPM	DEV	TT RM
						(255)	(394)	(492)							
75	5	20	330	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	400	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	430	30	803	999	99	99	999	999	999.9	94.9	99.9	99.9	99
75	5	20	500	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	530	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	600	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	630	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	700	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	730	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	800	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	900	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	930	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1000	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1030	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1100	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1130	30	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1200	15	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1215	15	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1230	15	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1245	15	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1300	15	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1315	15	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1330	15	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99
75	5	20	1345	15	803	999	99	99	999	999	999.9	99.9	99.9	99.9	99

TEST BR 00000
WIND SYSTEM TOWER DATA
CAPE CANAVERAL AFS, FLA.

YR	MO	DAY	TIME	INI	TWR	12 FT	54 FT	162 FT	204 FT	6FT 54FT	LAPSE	5	25	DIR	54 FT
			(2)	DIR	SPD	GST	DIR	SPD	GST	TT	DP	RATE	PPM	PFM	DEV
							(295)	(394)	(492)						
75	5	20	1400	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1417	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1430	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1445	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1500	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1515	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1530	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1545	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1600	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1615	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1630	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1645	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1700	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1715	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1730	15	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1800	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1830	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1841	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1900	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	1930	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	2000	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	2030	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	2100	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9
75	5	20	2130	30	803	999	99	99	999	99	999	999.9	99.9	99.9	99.9

APPENDIX H
CALCULATION OF THERMODYNAMIC VARIABLES
FROM RAWINSONDE DATA

The equations used for calculation of thermodynamic variables from measurements of altitude, temperature and relative humidity obtained from the GMD-4, AMQ-9 rawinsonde system are summarized herein; these equations, originally developed for the GMD-2 system (Ref. 1), must be used in conjunction with the list of symbols and units provided at the end of this appendix.

Atmospheric Density, ρ

$$\rho = 348.38 \frac{P}{T_v}$$

Pressure, P

$$P = P' 10^{-(h-h')/(221.266 T_{vm})}$$

Geopotential Height, h

$$h = \frac{R_0}{9.8} \frac{r_c H}{r_c + H}$$

Virtual Temperature, T_v

$$T_v = T(1 + .376932 e/P')$$

Mean Virtual Temperature, T_{vm}

$$T_{vm} = \frac{T_v + T_v}{2}$$

Vapor Pressure, e

$$e = 6.11 f_p 10^{7.5t/(t+237.3)}$$

Dew Point Temperature, t_d

$$t_d = \frac{237.3 \log e - 186.527}{8.236 - \log e}$$

Potential Temperature, θ

$$\theta = T \left(\frac{1000}{P} \right)^{.288}$$

Virtual Potential Temperature θ_v

$$\theta_v = T_v \left(\frac{1000}{P} \right)^{.288}$$

Absolute Humidity, ρ_w

$$\rho_w = 216.7 e/p$$

Microwave Refractive Index, n

$$n = 1 + \left[\frac{1}{T} \left(77.6P - 11e + \frac{374808e}{T} \right) \right] 10^{-6}$$

For data tabulation, use:

$$N = (n-1)10^6$$

Speed of Sound, V_s

$$V_s = 643.855 \left(\frac{T}{273.16} \right)^{0.5}$$

LIST OF SYMBOLS AND UNITS

e	vapor pressure	millibars (mb)
f_D	relative humidity expressed as a decimal	
g_0	acceleration of gravity at geographical location of the rawinsonde station	meters/seconds ² (m/sec ²)
h	geopotential height at the top of the layer bounded by h and h'	feet (ft)
h'	geopotential height at the bottom of the layer bounded by h and h'	(ft)
H	geometric altitude at the top of the layer bounded by H and H'	(ft)
H'	Geometric altitude at the bottom of the layer bounded by H and H'	(ft)
n	microwave refractive index	
N	unit of refractive index used for simplification of data tabulation	
P	pressure at geopotential height h	(mb)
p'	pressure at geopotential height h'	(mb)
r_e	radius of the earth	(ft)
t	temperature	degrees Celsius (°C)
T	temperature	degrees Kelvin (°K)
t_d	dew point temperature	(°C)
T_v	virtual temperature at geopotential height h	(°K)

T_v'	virtual temperature at geopotential height h'	(°K)
T_{vm}	the mean virtual temperature of layer bounded by h and h'	(°K)
V_s	speed of sound	knots
ρ	atmospheric density	grams/meter ³ (gm/m ³)
ρ_w	absolute humidity	(gm/m ³)
θ	potential temperature	(°K)
θ_v	virtual potential temperature	(°K)

REFERENCE

Daniel, O. H.: Digital Computer Reduction of AN GMD-2 Rawinsonde Data. Pan American World Airways, Guided Missile Range Division, Patrick Air Force Base, Florida, 10 May 1962.

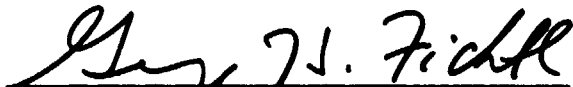
APPROVAL


COMPENDIUM OF METEOROLOGICAL DATA FOR THE TITAN III C (AF-777) LAUNCH IN MAY 1975

By J. Briscoe Stephens, S. I. Adelfang, and A. I. Goldford

The information in this report has been reviewed for security classification. Review of any information concerning Department of Defense or Atomic Energy Commission programs has been made by the MSFC Security Classification Officer. This report, in its entirety, has been determined to be unclassified.

This document has also been reviewed and approved for technical accuracy.


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